

AIRFIX

magazine

JANUARY, 1966

FOR PLASTIC MODELLERS

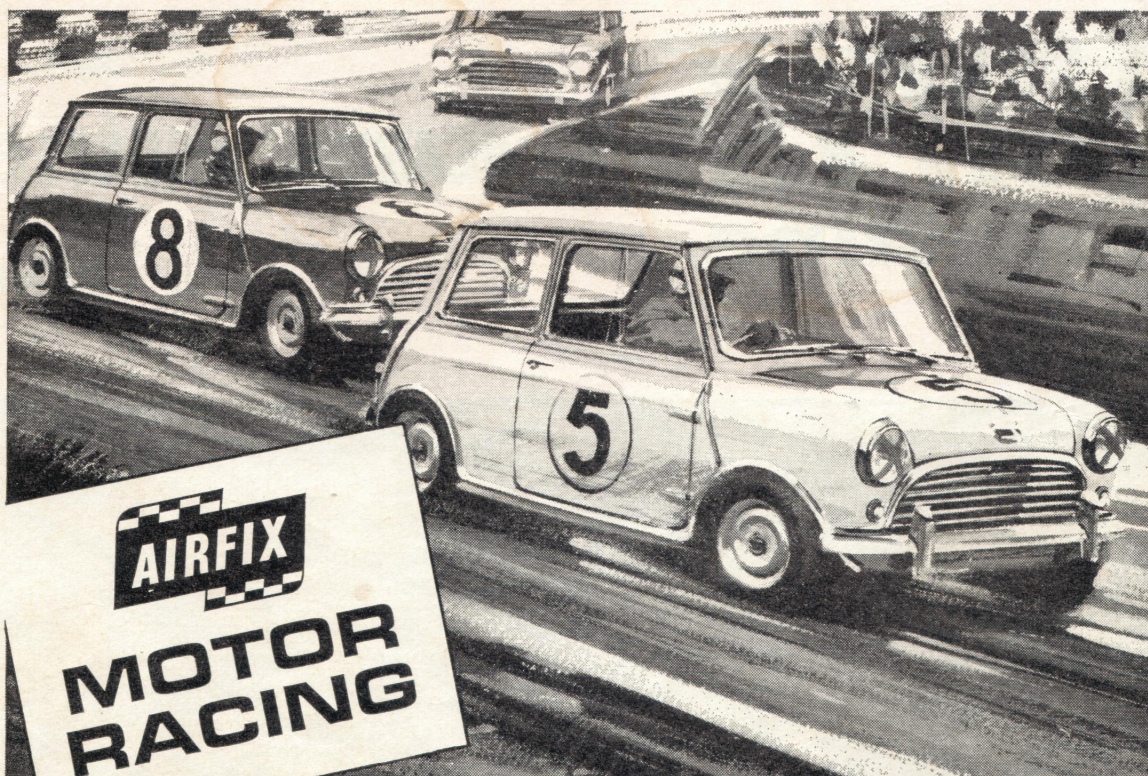
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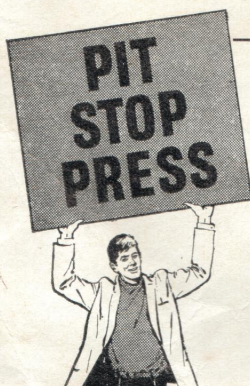
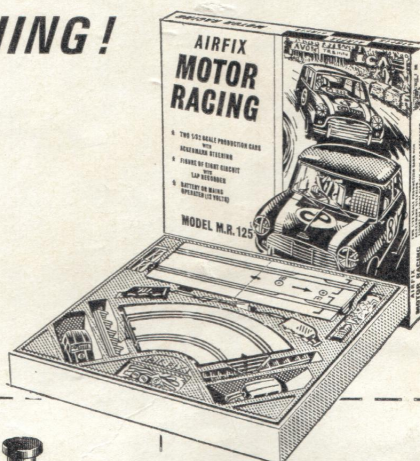
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Churchill tank kit conversions for beginners



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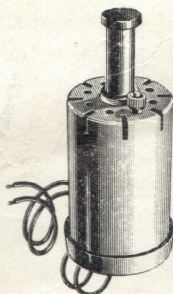
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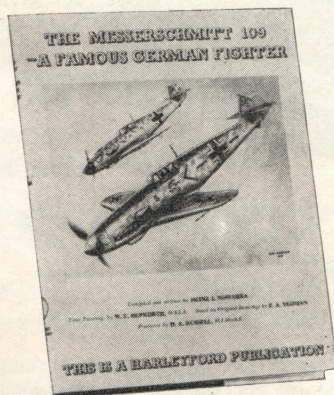
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AIRFIX magazine

AIRFIX *FOR PLASTIC MODELLERS*

magazine

Volume 7, Number 5

January, 1966

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COVER PICTURE

The Italian firm of Fiat has delivered 85 sets of these handsome diesel railcars to Spanish Railways. A further 100 are also being delivered to the Argentine Railways. In 1964, Fiat built over 1,000 diesel railcar sets and double that number in 1965. De luxe interiors for fast cross-country travel are a special feature of these sets.

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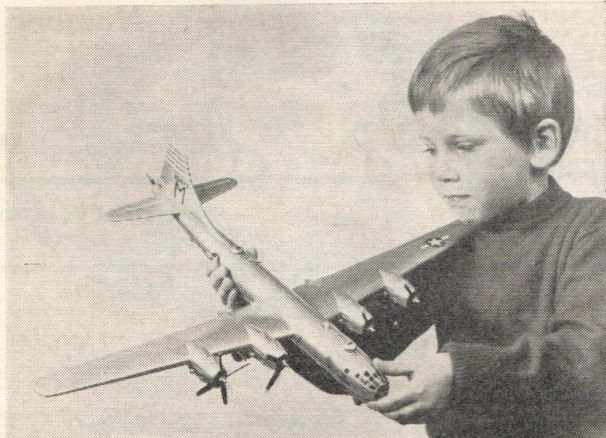
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The new Airfix B-29 kit makes up into what is probably the largest 1:72 scale plastic model aircraft in the world. It includes no less than 210 parts and costs 12s 6d.

1:72 scale Superfortress, and 353-part HMS Victory

NEWS FROM
AIRFIX

The world's greatest value in construction kits

WITH kits of both the B-29 Superfortress and HMS *Victory* being announced at the same time, it is difficult to decide which is the star of this month's new releases. Let's therefore work alphabetically and deal with the aircraft first! The Airfix Boeing B-29 Superfortress is probably the largest 1:72 scale plastic aircraft kit in the world, comprising 210 parts, spanning 23½ inches when assembled and priced at 12s 6d. It features many exciting moving parts, such as revolving gun turrets, elevating guns, opening bomb doors, retracting undercarriage with revolving wheels, revolving propellers, moving rudder and working ailerons and elevators.

The interior of the aircraft is highly detailed, and includes bulkheads, decks, control columns and consoles with printed instrument panels, a connecting tunnel between the front and rear halves of the fuselage running through the bomb bay (which carries 16 miniature bombs), and seats for the crew of seven. Much of this detail is visible through either the nine transparencies provided, or through the opened bomb doors. Other fine detail includes the remote-controlled gun turrets, DF loop, landing lights, four accurately finned twin-radial engines, propellers, exhausts, tail bumper and access ladder. A door in the rear fuselage may be fitted either opened or closed, and the access ladder acts as a tail support if the model is displayed standing on its undercarriage wheels.

Parts are included in the kit to make either of two prototypes. These are the early B-29-40-BW *Eddie Allen*, and the later model of the same mark, *Joltin' Josie*, the *Pacific Pioneer*. The 15-item full-colour transfer sheet features optional markings for either of these aircraft. Also included in this bumper kit are compre-

hensive painting and assembly instructions and a new design three-part display stand.

The B-29 was an enormous advance over all earlier bombers when it first appeared, and yet its complete design and development took only four years. Design was instituted in 1940 to a specification demanding a 'super bomber' to replace the B-17s and B-24s. The Boeing XB-29 prototype first flew in September, 1942, powered by completely new and untried Wright Double Cyclone engines. Its fuselage was divided into three separate pressurised compartments, the nose and tail sections being joined by a tunnel through the vast bomb bay. Also new was the use of remotely controlled gun turrets; the only manned turret was the one in the tail.

When ordered into production, the Superfortress became the largest single aircraft programme of the war, and in March, 1944, the first squadrons were sent out to India. First raids on Japan were made from advanced bases in China, and later attacks were made from islands such as Tinian in the Pacific. The first high-altitude attacks on Japan met with little success, but later low-level incendiary raids at night devastated the targets.

The first of the two aircraft that can be made from the Airfix

kit, *Eddie Allen*, operated in the south-east Asian theatre of war and completed at least 23 combat missions. The other aircraft, *Joltin' Josie*, was the first to land on the island of Saipan and took part in the first Tokyo raid. It was destroyed with all its crew on April 1, 1945. It was also B-29 *Enola Gay* that dropped the first atom bomb and brought an abrupt end to the war.

Superfortress production ceased with the end of the war when 3,970 had been produced, but many appeared in RAF markings as the Washington, and some were converted to aerial tankers for the USAF. Many were cocooned after the war and reappeared to fight again in the Korean conflict. The Russians also built a carbon copy of the bomber from three which were forced to land through lack of fuel near Vladivostok. This was the TU-4, which became Russia's standard long-range bomber.

The B-29 was powered by four 19-cylinder Wright Double Cyclone engines, and had a top speed of 350 mph. Maximum bomb load was 20,000 pounds, and heavy defensive armament was carried. Wingspan was 141 feet 3 inches, and length 99 feet. This month's Profile, pages 152-154, give a detailed B-29 history.

HMS VICTORY

LORD NELSON's immortal flagship at the Battle of Trafalgar, HMS *Victory*, joins the Airfix range as a Series 9 Classics kit, priced at 17s 6d. For this modest price the keen modeller gets the most ambitious kit yet launched by Airfix,

AIRFIX magazine

containing no less than 353 individual parts, plus rigging, sails, a display stand, ensigns, and signal flags for the famous hoist 'England expects that every man will do his duty', which was made by Nelson before his fleet engaged the combined French and Spanish fleets in battle.

In true Airfix tradition, the *Victory* model contains more than enough fine detailing to satisfy even the most exacting purist. Every gun carried in the full-size *Victory* is represented in the model—and more than 20 of them are on the upper deck, including the carronades on the fo'c'sle, each complete with a correctly patterned carriage and tiny wheels. Airfix have scaled down the 226½ ft length of the original to a replica measuring 23 inches overall and 17 inches from truck to keel. The finished model therefore makes a most imposing centre-piece for a collection, perfectly capturing the bluff, imposing lines of this great bulwark of Britain's sea-power during the Napoleonic wars.

Included in the fittings are boats, anchors, see-through gratings, booms, bitts, ladders, ready-use cannon balls, taffrails, dummy rigging screws, a rotating steering wheel of the massive four-man type, stern lanterns, and companion ways. Moulded details include the massive timbers—'Hearts of Oak'—the copper sheathing of the lower hull, a sea-gangway on each side, and the ornate and lavish scrolling round the stern windows and the figurehead.

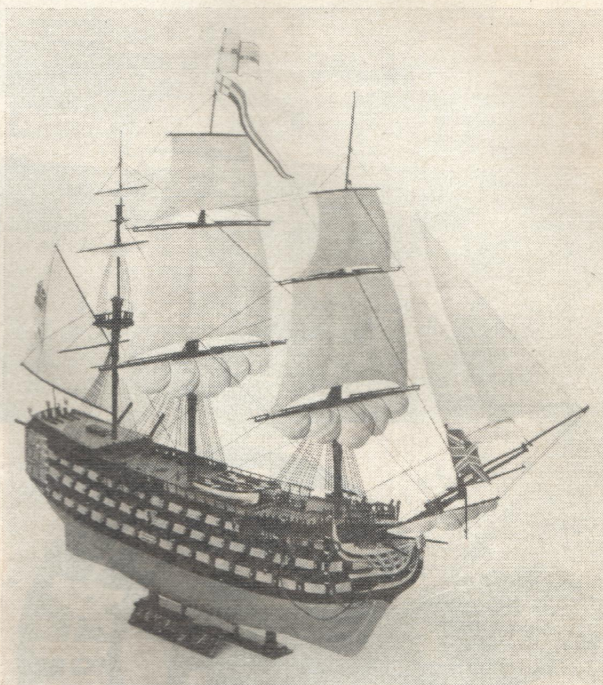
Plastic-covered shrouds and ratlines are provided, together with vacuum moulded sails. Of these, the mizzen and lower sails are furled, as also is one fore staysail. All have moulded buntlines and panelling to the usual Airfix high standard. The remaining rigging can be made up from ordinary cotton and a diagram on the instruction sheet shows how it goes. Younger modellers can quite happily omit this if desired, though the remainder of the kit will be well within their capabilities, thanks to an extremely well illustrated instruction sheet, showing each stage of assembly. The kit is moulded throughout—sails excepted—in black, minimising painting and setting off the smart copper bottom and buff rows of gun ports. This was, in fact, the first standardised Royal Navy colour scheme, adopted from Lord Nelson's idea.

Modellers who like to see the prototype of each new kit produced have the unusual chance (for an historic ship) of inspecting the original *HMS Victory*. For, unlike most old ships, which go for scrap, *Victory* was preserved as a perpetual memorial to Lord Nelson and can be seen in Portsmouth Dockyard, where she is open daily to visitors throughout the year.

First 'blooded' at Ushant in 1778, *HMS Victory* was commissioned as Nelson's flagship in 1803, and led the fleet into action on October 21, 1805, at the decisive Battle of Trafalgar. As is well known, Viscount Nelson died in his hour of triumph, mortally wounded by an enemy musket shot earlier in the engagement. After repairs, *Victory* remained in service with the fleet until 1812, when she paid off and subsequently became, in 1824, the flagship of Portsmouth Command. Until 1922 she remained afloat in Portsmouth harbour, but she was then moved into dry dock for preservation.

Since that time *Victory* has been completely restored to her original appearance, and opportunity has also been taken to replace many timbers threatened with rot. Although the French and Spanish fleets failed to destroy *Victory* at Trafalgar, the Luftwaffe nearly managed it in 1941, when they scored a direct hit on her with a bomb as she lay in dock! Fortunately the damage was repairable, those 'wooden walls' being as nearly impregnable to bombs as to cannon balls. *HMS Victory* remains the flagship of the C-in-C Portsmouth at the present time, having the unchallengeable distinction of being the oldest Royal Navy ship in commission.

January, 1966



HMS Victory is the oldest ship of the Royal Navy still in commission, and Airfix's 353-part kit is their most ambitious yet. Cost is 17s 6d.

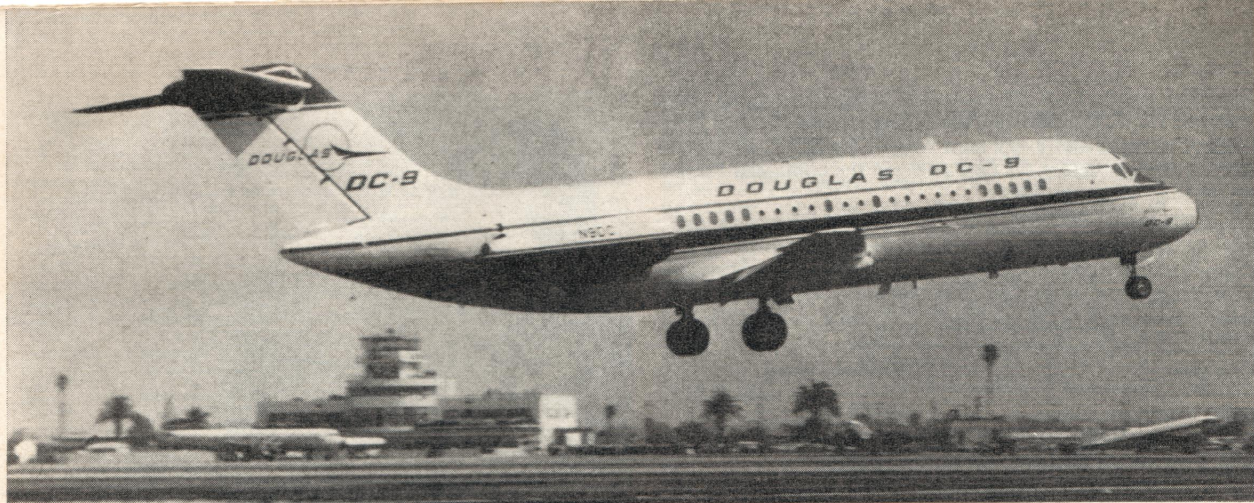
ARE YOU A KIT CONVERTER?

We have many letters from readers requesting back copies of **AIRFIX MAGAZINE** containing conversion articles. Back copies of many issues are still available for the benefit of readers who may have missed or mislaid earlier editions. For example, here are some of the practical articles which have appeared in recent issues.

1964: September—Motorising the Airfix Saddle Tank. **October**—Converting the Airfix Ju 88. **November**—Conversions with the Airfix Centurion. **December**—Carrier conversions and Catalina Profile. **1965: April**—Making Japanese infantry equipment and converting the Airfix Boston IV into an A-20G. **May**—Converting the Airfix Sherman into a Priest. **June**—Building a Hector from the Airfix Hawker Hart. **July**—Motorising the Airfix City of Truro. **September**—Adaptations of the Airfix Jeep. **October**—Modifying the Airfix Gladiator. **November**—'Ajax' cruiser and Lightning conversions. **December**—Converting the Airfix Tiger Moth and Panther tank kits.

Would readers please note that the following is a revised list of those issues that are now out of print: all 1960 editions; January, February, March, May, June and October, 1961; September, October and November, 1963; February, March, April, May, June, July and August, 1964; January, February, March and August, 1965.

Back copies cost 1s 6d each (including postage) for all issues up to and including August, 1963. From September, 1963, onwards, the cost is 2s per issue, post paid. Please address all requests for back copies, together with your remittance, to our circulation department at **SURRIDGE, DAWSON (PRODUCTIONS) LTD, 136/142 NEW KENT ROAD, LONDON SE1.**



The DC-9 on one of the many test flights made in the FAA certificate programme.

version of the aircraft, the series 30, also in production, will be flown in mid-1966.

Between 65 and 90 passengers may be accommodated in the Series 10 DC-9s. The fuselage of this aircraft measures just over 104 feet and the span 89 feet. All DC-9s are powered by Pratt & Whitney JT8D turbofan engines operable in two thrust settings—derated for 12,000 pounds take-off thrust, or full power to obtain 14,000 pounds thrust each. Cruising speed is 555 to 565 mph.

Twenty-two airlines, including 15 United States domestic operators serving 48 States and Puerto Rico, have announced orders for the aircraft. Airlines of six other countries in Europe, the Middle East, Australia and Canada will also operate the DC-9. Orders and leases total 219 and an additional 142 aircraft are on option.

Like the BAC-111, the new Douglas transport has been designed for medium to short range flights of from 100 to 1,500 miles. Many cities and towns previously served only by piston-engined aircraft will then join the jet age for the first time. Along with Braniff, Mohawk and the other United States domestic operators who have already found the tremendous profitability of the short-haul jet, namely the BAC-111, they will be providing services that can operate in relatively small fields and give the reliability of the larger, longer range jet liners on the international routes.

The certification of the DC-9 before the scheduled time completes a pattern set by the company in earlier operations with this aircraft. The first DC-9 left the production line on January 12, 1965, and the first flight was made on February 25, one month ahead of schedule. Progress with flight testing was so rapid that a provisional certificate was issued on August 6, less than six months after the first flight.

Although airline delivery of a provisionally certified aircraft was not due before December, one was delivered to Delta Airlines in September, and now that full certification has been achieved the aircraft will shortly be in full service on the domestic routes in the US and overseas.

FIFTY YEARS OF PHOTOGRAPHY

THE RAF is very naturally proud of its achievements in aerial photography, as it was this method that was used to increase the utilisation of aircraft during the first stages of the 1914-18 war.

The fiftieth year of the foundation of a school of Photography for the Service was commemorated early in December by the opening of a new school at RAF Cosford by Air Chief Marshal

AIRFIX magazine



THE Douglas Aircraft Company has beaten all records in its recent efforts to catch up with the BAC-111. With the news that a type certificate for the DC-9 was issued on November 23, Douglas very proudly announced that they had cut two months off the scheduled time for this clearance, and that they had been successful in exceeding the manufacturer's guarantees by as much as 15 per cent in some instances.

One is tempted to wonder just how this was done when there appear to be almost inevitable delays on several aircraft of British origin. Although certification was attained only nine months after the first flight, it culminated one of the most thorough flight test and development programmes ever undertaken for a modern transport aeroplane.

Five DC-9s were employed in development flying, and an additional four aircraft were used for demonstration work and pilot training. During the nine-month programme these aircraft amassed a total of 1,948 flying hours in 1,200 sorties. In a straight line the distance covered in these flights would be 1,080,000 miles, or 45 times round the Equator! Apart from demonstration flying, the DC-9s spent 1,280 hours on flight test programmes alone.

During flight testing only two sorties had to be terminated and only seven were delayed through unserviceability of a component or system. In the accelerated service testing of one of the aircraft used, 55 flights—totalling 151 hours—were made within 14 days, an average of 10.8 hours utilisation per day.

The type certificate awarded by the Federal Aviation Agency to the DC-9 covers only the series 10 model, with gross take-off weights ranging from 77,700 to 85,700 pounds. The larger

Sir Alfred Earle, KBE, CB, Vice Chief of the Defence Staff, a former pupil and instructor at the School of Photography, and wartime CO of the No 2 School of Photography.

In January, 1915, Lt J. T. C. Moore-Brabazon (later Lord Brabazon of Tara) was placed in command of the Experimental Photographic Section, Southern Aircraft Reserve Depot, attached to No 1 Wing, RFC, 'to investigate the best type of camera and the best organisation for air photography'. Before this No 3 Squadron was making operational photographic sorties in France and the rapidly developing science of air photography was recognised by the foundation of the present school at Farnborough in 1917 as a training unit for the RFC.

The unit remained at Farnborough until 1947, when it moved to make room for the Empire Test Pilots' School on the airfield. It was temporarily housed nearby until a permanent home could be found for it at RAF Wellsbourne Mountford, in Warwickshire. In 1963 the school moved again, this time to its present home at RAF Cosford, near Wolverhampton, and the design and building of a new headquarters began.

The new building is typical of the desire of the Service to provide the very best for its trainees. The school trains all apprentice and adult RAF photographers, and will shortly be opening courses for officers. Between 110 and 140 trainees of all grades can be accommodated at one time.

Careful attention has been paid to the conditions under which training takes place. Chemicals and clean water are readily available in the classrooms, which employ all the latest methods of developing and printing. As photographers in the RAF are mainly concerned with air-to-ground cameras, classrooms are set aside for instruction in these, and sectional models are available for instructors.

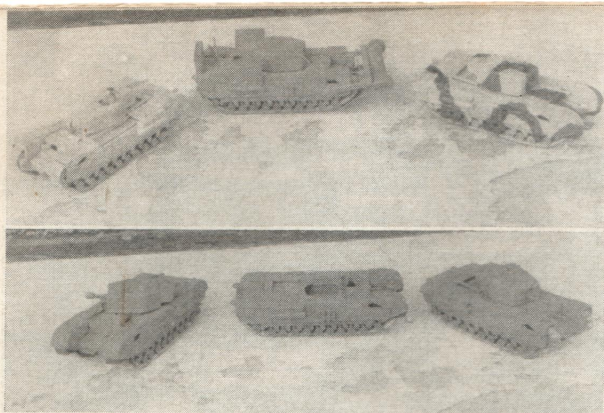
With the rapid advances made in aerial photography since the war, and the need to keep abreast of the speed of present-day aircraft, the new RAF School of Photography at Cosford has the satisfaction of knowing that its training methods and well-appointed building will do much to provide the RAF with the type of men capable of producing the highest standards in both air and ground photography.



Top, right: Hawker Siddeley Dominie, XS712, one of the first aircraft to be delivered to the RAF at Stradishall. (Photo: R. L. Ward.)

Above, right: This photograph, taken during the nine months intensive flying before the issue of the FAA certificate, shows the first prototype of the DC-9, N90C, being towed on to the hardstanding for a test flight. Note the easy access to the rear-mounted engines on the aircraft in the foreground. **Below:** A Westland 'Wessex 60' seen during a trial flight.





Top: Completed models of (from left) Churchill IV NA 75, carpet layer, and Churchill III. **Above:** Completed models of (from left) Churchill VIII, APC Mk VII, Mk X LT (Mk VI similar).

Simple Churchill variants

Military modelling

by C. O. ELLIS

WITH literally scores of conversion possibilities open to military modellers, we have tended to cover the more complicated ones in this series—particularly over the past few months. This has left several models unaccounted for, the Churchill in its various basic forms being a notable absentee, despite its importance for wargames armies or as the ‘back-bone’ of a model collection. So here are six extremely easy Churchills, five of which, at least, should be within the capability of every reader. In fact, I suggest that these particular conversions would make an excellent starting point for any young reader (or older enthusiast) who may have been deterred by the more advanced nature of previous models described in previous articles.

For newcomers, it is worth mentioning that all you need for conversion work is a *sharp* craft knife, a small file, some post-cards, polystyrene sheet if desired, cement, and one or two small drills. An X-Acto razor saw is a worthwhile addition, plus all the cocktail sticks, lolly sticks, ball-pen tubes, and plastic scraps and left-overs you can find! You won’t need all these for the Churchill models, but they will come in handy later on. Now read on:

Churchill Mk III: The Airfix kit represents the Churchill Mk VII, final development of the Churchill series. For the 1942-43 period you need the appropriate Churchill model of the time,

Key to drawings: A—Rotating hatch, showing periscopes. B—New visor plate for early marks of Churchill (arrowed plate stands proud of rest—use 40 thou plastic sheet). U—Optional mudflaps, make from paper. W—To remove front section cut away shaded part. This shows inside face with axle bearing. Outside is cut away entirely. V—Template for 95 mm howitzer. X—Modifying track cover. To remove inside section cut away between dotted lines. Area inside arrows can be covered with card if desired on the Mk VII and VIII. Y—Plan view of carpet carrier frame, showing spindle and release line on right-hand side. Z—Side view of frame shows spindle ends (cut from card). Cement at angle indicated by line, which shows horizontal plane. Make frame from scrap, eg, coupling rods. All drawings full-size.

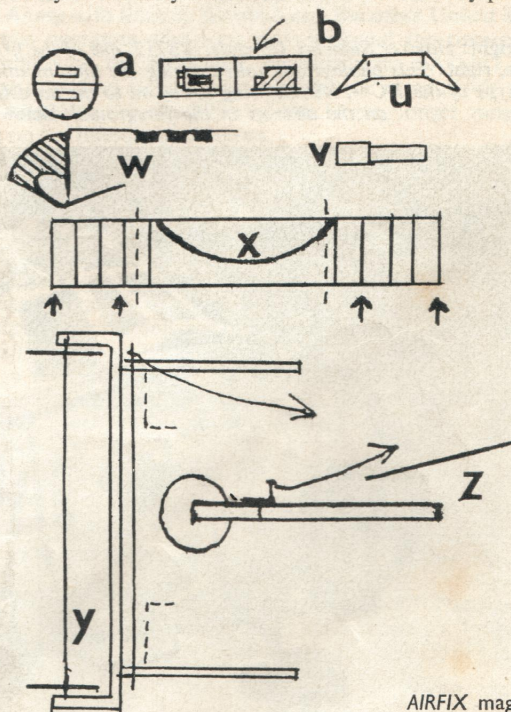
and the easiest of these is the Mk III. There are some dimensional differences between the Mk III and VII, but since these amount only to a few inches in width they can be reasonably ignored in this scale.

On the turret, omit the cupola, not fitted on these early marks, and replace it with a round hatch cut from card of 9 mm diameter. This is cemented directly above the hatch opening and represents the rotating hatch of the original. Add two tiny periscopes, cut from card, and score the new hatch across its diameter to represent the two opening halves. Then take the 75 mm gun moulding and carefully cut off the muzzle-brake 2 mm from the end. This leaves just enough of the muzzle-brake to represent the counter-weight of the 6 pdr gun with which the Mk III was armed.

The visor plate carrying the bow m/g is omitted from the hull and drawing B shows how the new visor plate is arranged. On

the left (looking forward) goes a plate of appliqué armour to protect the machine gunner. On the right there is an oblong vision flap for the driver, complete with vision block. When you have discarded the original visor plate, you will find that there is a true-to-life aperture left in the hull front at each side. So you could, if you wished, cement the flap in the open position. The m/g is cemented back into the original position. Next, from the hull side, carefully cut or file away the hinges on the escape hatch; then cut a 7 mm × 7 mm square of card and cement this *over* the original hatch. The model is now complete, but you could add as an option the mudflaps shown in drawing U. These are cut from paper and cemented under the horns.

My model is painted in ‘sand’ (Humbrol BR Interior Stone) with a dark grey—almost black—overall pattern. This represents the finish applied to Churchill Mk IIIs sent to Tunis with the First Army in the early months of 1943. When freshly painted,



all numbers and signs were obliterated, so they can be omitted from the model as well.

Churchill Mk IV: All the modifications described above, including the 6 pdr gun, are applicable to the Mk IV. In addition, the turret shape is altered to represent the cast type found on this mark. This involves filing all edges to give a rounded appearance, quite an easy operation which can be followed by studying the photographs. The model shown is a variant of the Mk IV, mounting a Sherman 75 mm gun and known as the NA (North Africa) 75. This has figured in recent Readers' Letters and incorporates the complete mantlet and gun straight from the Sherman kit.

Note that the dust guards on the Churchill were removable and were made up in five sections—three on top plus the two curved ends. After some time in service, these sections tended to come adrift or get damaged—particularly the front end. The vehicle on which the model is based also had the centre section removed, a common feature, which can be reproduced on the model by careful cutting and sawing, as shown in the drawing. Beginners can legitimately ignore this. The NA 75 was a 'local' modification to 120 Churchill IVs which were subsequently used in the Italian campaign in 1943.

Churchill Mk VI: This model has all the modifications described for the standard Churchills III and IV, but employs the 75 mm gun supplied in the kit and a cast turret. My model actually represents a Mk XLT which was the designation applied to a Mk VI modified up to Mk VII standard. Just in case this sounds confusing, it merely means that this model uses the cupola supplied in the kit in place of the rotating hatch of the original Mk VI. There should also be a sighting vane—made from a 'V' of fuse wire—in the turret roof just behind the left-hand periscope. An additional fitting on the model is a mud chute under the opening in the dust guards. This is simply a 1 mm wide strip of card cemented along the sloped leading edge of the side armour. This again is entirely optional.

Churchill Mk III carpet layer type A: For the impending invasion of NW Europe in 1944, 79th Armoured Divn developed numerous special purpose vehicles to assist the assaulting forces. One type required was a carpet layer to place canvas mats across sandy beaches, thus providing a firm surface for following vehicles. The type A carpet layer was the simplest of these. It was based on the then obsolescent Churchill Mk III chassis, which was furnished with a carrier frame for the purpose. I used discarded loco kit coupling rods for the frame arms, with a cocktail stick for the spindle—non-rotating in my model. Note that there is a metal rod—made from wire—across the frame to hold up the end of the carpet. This was released by pulling on a wire led into the turret through the bomb thrower aperture on the top right of the turret. Finally, brown parcel paper is used for the carpet. Take all the measurements from the drawing. The chassis is made up according to the description already given for the Mk III, but the bow m/g and the 6 pdr gun are omitted, leaving only the co-axial m/g for self-defence.

Churchill Mk VIII: For close support purposes some Churchills were fitted with a 95 mm howitzer. One such was the Mk VIII, which was otherwise identical to the Mk VII. The 95 mm howitzer is made from a 12 mm length of plastic cocktail stick with a 4 mm wide strip of Sellotape wrapped around the end as a counterweight. The only other modification I made to the model was a thick 1.5 mm strip of card cemented round the base of the turret. This is really an optional job, but it effectively represents the lip on the real thing to protect the turret ring. This same modification can, of course, be applied

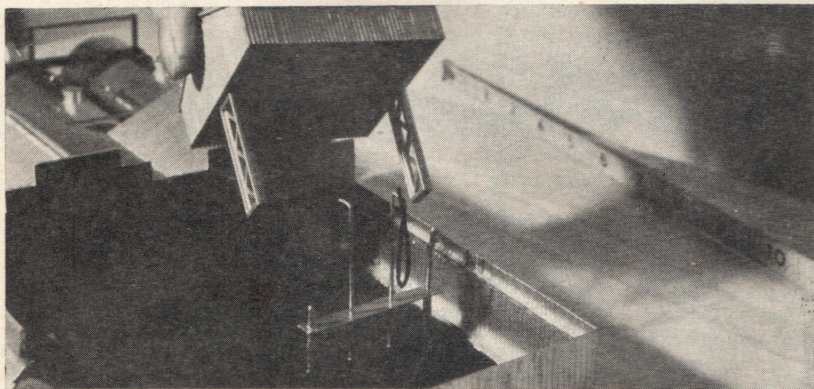
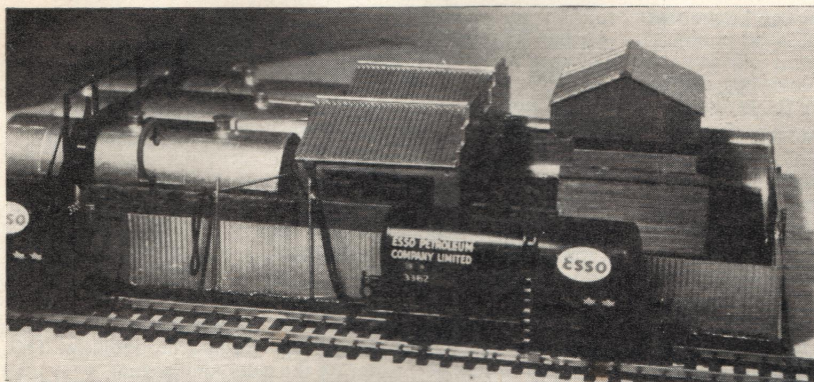
to the standard Mk VII. You could also, if desired, fit the 95 mm howitzer to the Mk IV in place of the 6 pdr; in this form you have a Churchill Mk V.

Churchill Mk VII APC: Finally, an interesting post-war adaptation of the Churchill VII to carry troops. This vehicle, which appeared only in small numbers, was used solely for training. To make the model, simply cut away the turret ring and assemble thereafter as per the instructions. Fit a bulkhead in front of the engine, and bench seats each side of the open compartment. A 5 mm × 20 mm shield in front of the troop space completes the model.

Wading equipment: The carpet layer is shown fitted for wading, with trunking over the side air louvres and the radiator. This measures 17 mm × 11 mm on the sides and 19 mm × 11 mm on the back. Width is 3 mm in each case. I made these from balsa sheet, covered with writing paper to conceal the grain. Exhaust pipe extensions are also required, each 14 mm long. These are cut from plastic-covered bell-wire and cemented in holes drilled in the exhaust manifold. You will need a good contact adhesive to make this lot stick on the plastic. All the models described here could be fitted like this, the purpose, of course, being to enable the vehicle to wade ashore from LCTs.

Top to bottom: Churchill III carpet layer with wading gear (left) and Churchill X LT (or VI) showing work involved. This view shows how the turret is filed to give a cast appearance. Churchill VII APC (left) shows open top; also wire and card used to provide hand and foot grips on side for infantry. Note also the strengthening on the track cover. This is 15 mm long, cut from paper to fit. Churchill VIII on right has 95 mm howitzer and modified turret. Note also the mudflaps in front, cut from paper. Full-size Churchill X LT shows cast turret, 75 mm gun, cupola, and sighting vane. Note armour bolts on side. Front view of Churchill VII APC shows all necessary detail. There is an ammunition box mounted at the rear of this one. Markings—repeated at rear—indicate School of Infantry. (Prototype photos courtesy Warpics.)





Top: General view of the completed depot, showing two Airfix tank wagons, the trackside delivery pipes, tanks and sheds. **Above:** Road vehicle loading bay with the awning about to be fitted in place.

BASIC RAILWAY MODELLING—by Norman Simmons

Trackside depot for tank wagons

Eleventh of a regular bi-monthly series catering specially for newcomers to model railways

BECAUSE there are so many different types of freight wagons, they can give unlimited scope and interest to a model railway. As in all things though, if we wish to preserve a sense of realism within the confines of our layout, we must be careful not to overdo this variety. We must at all times remember what our wagons are there for, and what purpose they are serving on the layout, otherwise it will just degenerate into a collection of meaningless models.

Such restraint is not easy, as wagon kits, particularly in the Airfix range,

are so reasonably priced. For an outlay of two or three shillings another basic type of freight vehicle can be added to the layout which may need special facilities for its loading, unloading or operation. An example of such a vehicle is the Airfix BR tank wagon.

This model is based on the Esso Class B tank wagon. The full-sized versions find the source for most of their traffic in large ports and oil refineries, such as the one at Fawley, Southampton. We none of us could hope to build a model representing

anything like this on our layouts, so for purposes of our own operating plans we will have to assume that Fawley is off the baseboard somewhere.

At the delivery end, however, many of these wagons find their way to small lineside depots such as are well within the scope of modelling. This is the sort of excuse for which we should be looking, as with such a depot on our layout we have every reason for running several of these attractive tank wagons in our fleet of freight vehicles.

The prototype of the oil depot I have chosen to model this month is at Aldershot station, on the Southern Region. It is served by one of BR's sidings in the yard to the south of the station, and several tank wagons arrive, unload and are removed every week. Its purpose is to serve as a rail head for the distribution of Esso products by a fleet of road vehicles owned and operated by Petroleum Distributors (Surrey) Ltd, by whose courtesy I was allowed to visit the depot recently.

There are five storage tanks in the Aldershot depot, but to conserve space I have only modelled three. Each tank holds 12,000 gallons of either petrol, paraffin, or fuel oil for farm tractors or home heating. All the tanks measure 30 ft by 9 ft, but the internal partitions can be varied to provide different combinations for storing more than one type of liquid in one main tank. This accounts for the varying positions of the tank filler and inspection caps.

To construct these tanks in 4mm scale I found the best material to start with was a cardboard tube from the centre of a toilet roll! In fact it is about a millimetre or two undersize on exact scale length and diameter but, as I propose wrapping another thickness of card around it, this is really an advantage. The second piece of card should be about postcard thickness, $3\frac{1}{2}$ inches long and wide enough to wrap around the tube.

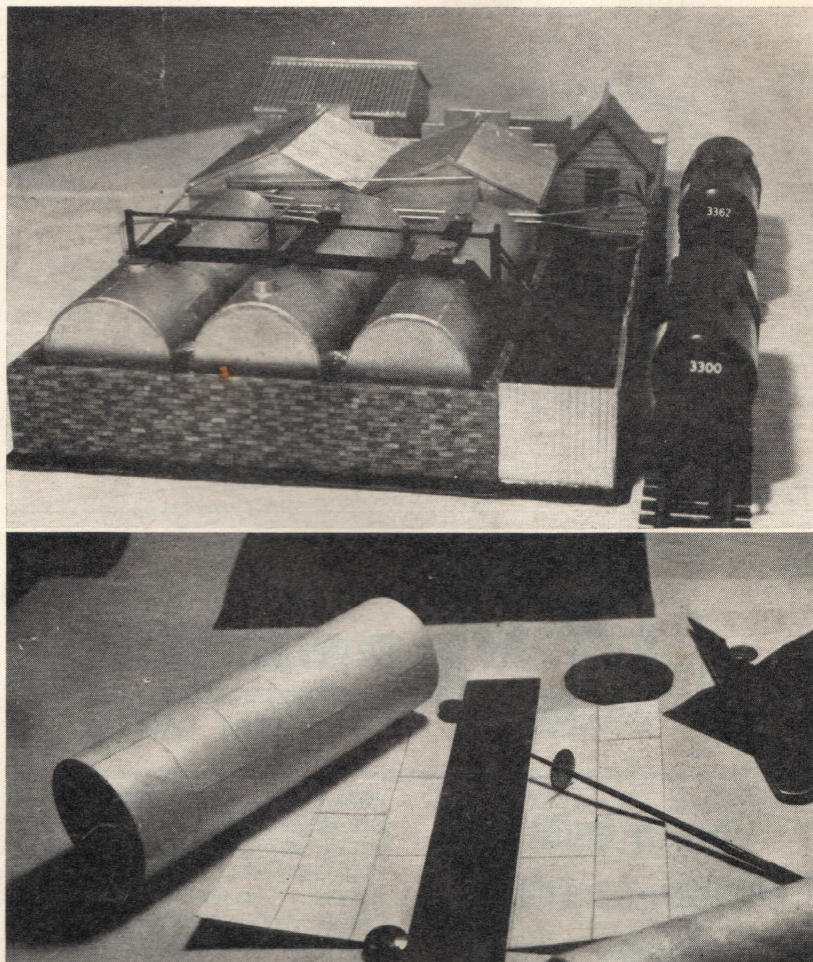
The card should be marked on the underside to represent rivets. I found the best way to do this was with the aid of a gear wheel from an old broken wrist watch that had been hanging about in the junk box for years (the model makers' maxim: never throw anything away, you never know when you might need it!). The tanks are made up of six rings, each comprising about four plates, and the gear wheel should be carefully rolled

along the position of each plate so that the teeth of the wheel make sufficient indentation to represent a row of rivets. The effect is very realistic and well worth the extra effort. Two discs of card were glued together to form the ends, and the tank can be finished off with tank fillers cut from $\frac{1}{4}$ inch dowel capped with $\frac{5}{8}$ inch discs of card and the whole painted with aluminium paint.

I supported the tanks near both ends with saddles cut from a sheet of 3/16 inch sheet balsa. Three $1\frac{1}{2}$ inch holes, the diameter of the tanks, were cut along the centre line of a 2 inch sheet of balsa with the holes spaced $\frac{1}{4}$ inch apart. The wood was then cut along the centre line to form two saddles. The brick surrounding wall was cut from 1 inch x $\frac{1}{4}$ inch balsa and was made sufficiently large to allow 3/16 inch clearance all round the tanks.

In the prototype, the main building alongside the tanks contains the electric pumps for loading and unloading the fuel. It also provides facilities for storing oil drums and miscellaneous equipment. I found the Airfix service station kit made a good basis for this building, with one or two alterations as follows. I increased the height of the walls of the building by adding a $\frac{3}{8}$ inch strip of thick plastic card to the base of the two sides and the back. The front of the building I altered entirely by covering the Airfix part with a sheet of thin plastic card, cutting out one small window opening and a door frame where the shop window and door used to be. I also allowed an extra $\frac{3}{8}$ inch at the base for the increased height. Half the garage door and a strip of plastic was cemented in place to represent a sliding door, and a window and door was finally fixed in place. The only alteration to the back, apart from increasing the height, was to blank off the doorway. Finally, the building was painted aluminium all over, except for grey window frames and door, and black base.

After the storage tanks and pump house, the third main facility in the depot is the road vehicle filling apparatus. This is protected by an awning, under which road vehicles can be driven. I constructed the awning from half a roof from a second Airfix service station kit and spare parts from the station platform canopy kit—the photographs will make the origin and assembly of these



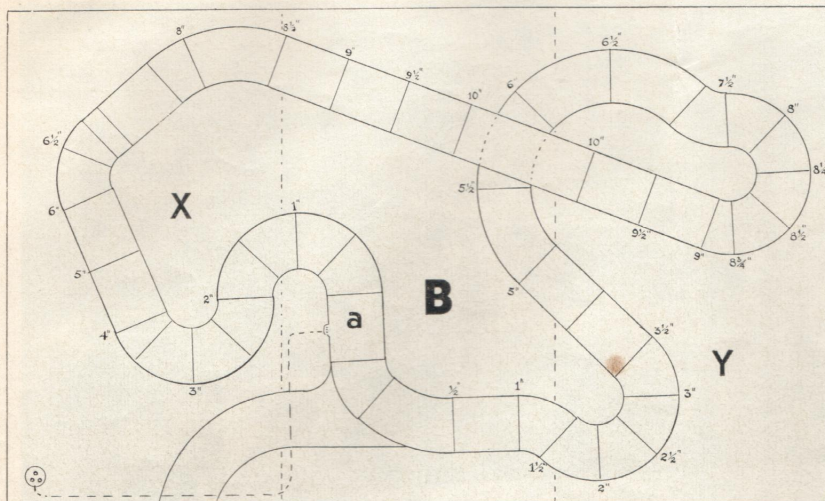
Top: Another general view of the completed depot, clearly showing the wire tank connecting pipes and the catwalk. **Above:** A picture taken during construction, showing how the rivet lines on the tanks are marked out with a gear wheel.

various parts obvious. The filling apparatus is, admittedly, a bit of a bodge, being much more representational than it could ever be functional, but it is largely hidden by the awning and there is little point in spending a lot of time on it. The filling pipes are 28 gauge wire, bent and painted black at one end to represent the flexible connecting hoses. A raised platform about three or four scale feet high, connected with a piece of spare Ratio signal ladder, formed a working platform for the operating crew.

The Aldershot depot contains a very comprehensive workshop and maintenance depot, which you could represent by using another Airfix service station kit, but I have had to leave this out of my model as I was restricted by the space I had available. As a point of interest, I managed to

assemble all the main structures on a piece of hardboard about 12 inches by 7 inches. Not mentioned so far is the office, taken from the Airfix trackside accessories kit, and the corrugated iron fence surrounding the site. A double gateway, suitably modified from the service station kit, has been provided for road vehicle access; and a single gateway, from the same source, has been installed in the fence near the rail wagon connecting hoses. These hoses and the various pipes connecting them to the tanks and pump house were made from 28 gauge wire.

Again it must be confessed that these have been installed to create effect rather than accuracy, but in this I think they succeed. Finally, catwalks and a stairway to the tanks were made from plastic card and 1/16 inch square strip wood.



Wheelspin BY BERT LAMKIN

How to build a custom-contoured slot racing circuit

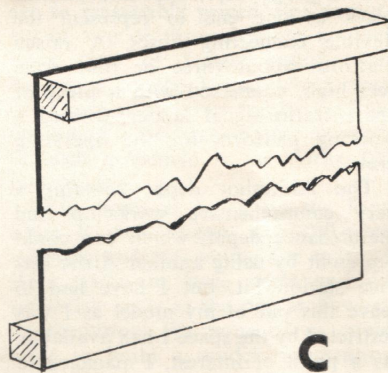
AT this time of year it is reasonable to suppose that a number of people are making their first contact with miniature motor racing. With these new entrants in mind this edition of Wheelspin is dealing with building a circuit. As a variation to the more or less level circuit, this particular layout aims at a highly contoured and extremely twisty arrangement. This type of track is not very easy to produce in a number of separate sections, so the single base is kept to reasonable limits of 7½ ft by 4½ ft.

The baseboard is constructed from hardboard or insulation board and a mixture of 2 in × 1 in and 1 in × 1 in timber. Sketch A shows the method. Aim to achieve a rigid frame. The four corners can be reinforced with hardboard on the underside as in A1. These gussets also form the stops for the folding legs. The legs are made as in A2 and pivot on 4 in coach bolts passed through the sides as in A1. The bolt holes are drilled to give angle to the legs

when in the open position against the stop. This will make the unit stand more firmly. The supports can be held in the closed position by two small bolts screwed to the central 1 in × 1 in batten, and registering with holes drilled in the cross pieces of the supports.

With the frame complete the hardboard, or alternatively ¼ in insulation board, can be fitted. This is laid in three pieces 4½ ft long by 2½ ft wide to make it easier to handle, the joins coming over the cross battens. Use panel pins to attach the board to the frame.

A start can now be made to mount the track on the baseboard. The circuit shown in plan B comprises one terminal straight, ten standard straights, two long straights, twenty-one standard curves,



and seven outer curves—all Airfix track. Some of the pieces will have to be shortened but these can be dealt with as one proceeds. Start with the terminal straight marked 'a' on the plan, this is fixed by wood screws through small holes drilled at the sides. To keep the power supply out of the way, connect the straight to a socket mounted near a corner of the baseboard, running the wire underneath it. Now fit the curves giving 180° turn—these rise progressively to a height of two inches above the base. The method of supporting the track is shown in C using ½ in square wood and hardboard. The measurements on the plan indicate the height of the track surface above the baseboard. The amount of lift to each section is governed by the fact that we are dealing with straight rather than curved contours. If one goes to the extra trouble of cutting the vertical flanges on the track sections, and increasing the number of supports, then steeper gradients can be achieved. Attach the support to the base with Evostick or similar adhesive, and the track may be fixed to the support either by the same method or with small wood screws.

Following the plan, the next section is a reverse bend of three-and-a-half standard curves. The piece to be cut can be marked by laying a ruler across the outer and inner edges, and drawing a line between the two midway points—but I guess you all know about arcs and chords! The next three pieces are two standard straights and a curve; with these in position the track surface is now 6½ in above the base.

The next stage is to start from section 'a' again, but now going in the reverse direction. Thus we have a curve, an outer curve, and a straight rising to one inch. The next five curves, one to the right, the others to the left, take us up to a height of 3½ in. The next two straights adding another inch-and-a-half brings us to the right hand sweep of four outer curves. This is followed by one standard curve to the left and a 180° bend of four-and-a-half standard curves to the right. Incidentally, don't forget to insert the extra contact tags when you cut a piece in half.

We now come to what is virtually the only straight part of the circuit. This consists of two standard straights, rising to ten inches, a long straight forming an overbridge, and three standard straights descending to 8½ in. Incidentally, you will notice a change of gradient in that last hairpin—this has been done intentionally.

Following the straight section is one

AIRFIX magazine

outer curve to the left. This brings us to the last section which is composed of one standard straight, and three odd length pieces. To determine these accurately it is best to erect a sub-base of hardboard $\frac{1}{4}$ in below the track surface. A piece of board seven inches wide cut to fit between the two track ends, and mounted on the same type of supports will do. A straight edge across the gap will give you the height. Cut a $3\frac{1}{4}$ in length from a straight section, and join the cut edge to a standard straight with polystyrene cement. Remember to maintain electrical continuity at the join.

Now position an outer curve and a standard curve on the track ends and lay the fabricated straight over the two; adjust them until the curved edges run smoothly under the straight. Mark with a pencil across the curves at each end of the straight. This will be the line on which to cut the two curves. Slip the extra contact tags in place on the cut ends, and assemble the three pieces on the sub-base. When they are in position run some cement along the joins with the cut edges. Before proceeding with the landscaping try a car on each lane. I would think that the normal direction for the circuit would be clockwise. You may find a little packing with strips of card needed at the bends by the way.

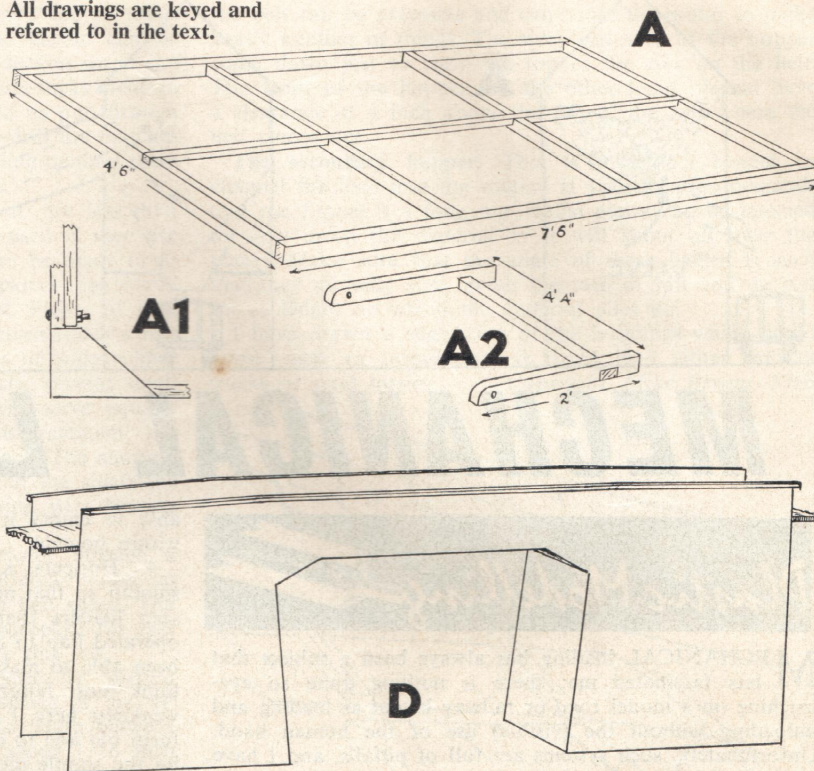
There is a risk at this stage that you will want to start racing—resist it if you can, because landscaping will make an appreciable difference.

Landscaping

Start by adding the sides to the over-bridge. These can be made of stout card, reinforced where necessary with strips of wood (balsa will do, and at the same time help to keep the weight down). Sketch D is a suggestion, the inside of the arch being formed by card glued to battens on the sides. The ground contours will eventually mask the lower parts of the bridge piers. X and Y in plan B indicate the two highest parts of the scenery, being regarded as hill tops. These can be from 12 to 18 inches above the base. If one visualises the road winding round one hill, then crossing a valley, and skirting the other hill before descending, you will get an idea of what was intended.

There are various ways of producing landscape. Readers will no doubt have certain methods themselves, but the method I suggest uses wire netting and cloth. Using $\frac{1}{2}$ in or smaller mesh netting it is bent and cut to fit roughly into the areas to be contoured. Aim at a varying descending line from the highest to lowest point. This will create a

All drawings are keyed and referred to in the text.



terraced effect for some parts of the circuit, and where the road comes near the edge of the baseboard the ground will drop steeply to form a cliff face. Tack the netting in place with small staples or panel pins, then cover with cloth—old flannelette sheets are just the job—the right approach on the domestic front should produce some results!

Allow plenty of margin with the cloth and trim it to meet the track edge with a slight overlap. It can then be fixed with Evostick or Bostick. Where there are deep folds to the point of overlapping cut away the surplus and rejoin the cut edges. Give the glue time to set and cover with emulsion type paint—green for grass, brown and yellow for the steeper slopes where the ground would show. Merge the colours while they are wet, to avoid sudden changes. It is best to do a small area at a time, and before the paint starts to dry sprinkle with one of the commercial preparations—usually dyed ground cork or sawdust—obtainable at most model shops. As it dries the paint will fix the sawdust, and give a reasonable representation of grass, etc.

Bushes (from lichen) and trees can be added to suit one's own taste, not forgetting to observe nature when siting these. Mature trees do not grow on nearly vertical banks for instance. No provision for a Paddock and so on has

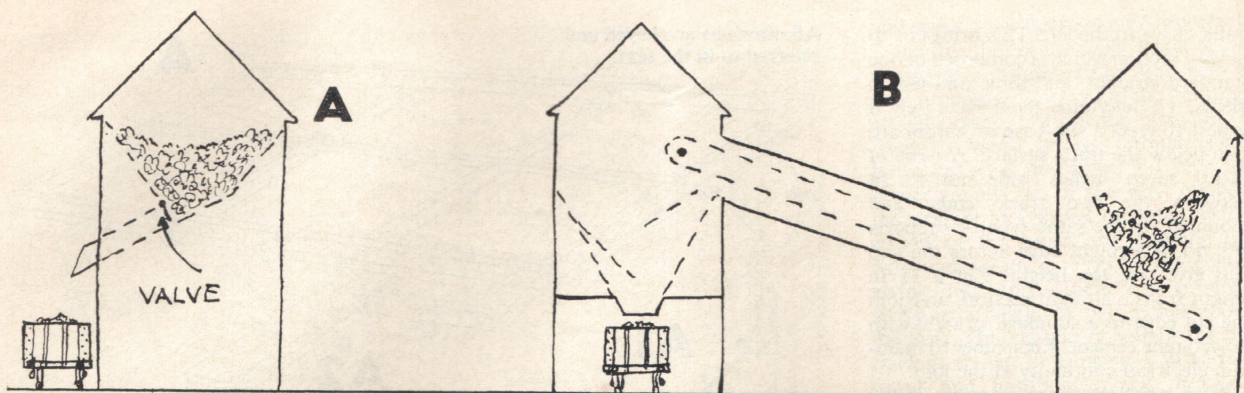
been made, but the simulated road in the lower left hand corner could provide access to and from the circuit.

Use card for the transition from track surface to the baseboard. Cut to fit close to the track sections, and pack underneath to give a gradual ramp. Finally paint the access road the same colour as the circuit. Various embellishments such as road signs can be added if so desired. I think you will find this quite an exciting circuit to race on, and the boy next door with his very hairy motor will most certainly be in for a shock!

Racing manual

REVELL have just published a colourful 28-page booklet on slot-racing. Entitled *The Revell Manual of Model Car Racing*, it costs 9d from model shops, and the contents feature articles on the history of miniature motor racing and on how to get the best out of Revell slot-racing equipment.

There are hints on tuning cars for top-notch performance, building racers and custom cars, planning a layout with proprietary parts, and how to go drag-racing. The text is illustrated with over 32 photographs and a number of drawings. The booklet should interest all slot-racers from the beginner to the veteran.



MECHANICAL LOADING



MECHANICAL loading has always been a subject that has fascinated me; there is nothing quite so eye-catching on a model road or railway layout as loading and unloading without the (visible) use of the human hand. Unfortunately, such systems are full of pitfalls, and I have seen some that are always breaking down or working in fits and starts—and there is little else as frustrating as a plant which deposits loads haphazardly round the countryside!

I think the main thing to remember in designing any such system is that simplicity will always pay dividends in the long run. The more complicated the method you use, the more things there are to go wrong or to get out of adjustment. The basic design must try to eliminate as many causes of trouble as possible.

BASIC PRINCIPLES

There are a few basic principles for mechanical load conveying which need recognising from the start.

1. The simplest method is the conveyor belt, which can be used either on the level or up inclines. In model form, it is better to forget any idea of one belt doing both level and inclined conveyance—as sometimes happens in full-size practice. If you have to change from level to inclined travel, use two belts—they can be driven from the same motor.

2. The type of material being conveyed. Use something clean and of reasonably uniform size. I find plastic 'coal' or plastic 'granite' almost ideal. Avoid anything messy, dusty or too small. Sand is hopeless—it escapes everywhere and plays havoc with gears, bearings and motors. Similarly, real coal is too dirty and, however carefully you screen it, it varies too much in size. Anything metal is not satisfactory, particularly if you are using it in conjunction with a model road or railway, because any that escapes can stick to mechanism magnets or cause 'shorts' on the track.

3. Plan for the awkward fact that, however carefully you build your mechanism, some of the material will escape and get where it is not supposed to be. If you can arrange a 'spill tray' under the loading area, you will be

able to empty it from time to time and keep the mess within bounds.

4. Hoppers. Keep the bottom of the hopper steep and smooth so that material will not catch and pile up. I have seen loaders that rely on a mechanically or electrically operated flap to control the flow of material. I have never been able to make a foolproof valve or sluice gate, and I think most failures in loading plants result from a basic weakness here. I am quite convinced that it is best to leave them out and to control the flow into the lorry or the truck by the simple means of regulating the amount of material that goes into the hopper. This means, of course, that the hopper is *not* a reservoir of material waiting to be loaded, but merely a funnel to direct into the truck whatever is put into the hopper. Delivery to the hopper is by conveyor belt.

The two systems are drawn schematically in sketches A and B. Sketch A shows the most usually reproduced system, where the hopper is part-full of material and the amount for loading the wagon is controlled by a sluice gate or valve. If the valve jams, the material continues pouring into the truck; alternatively, if the material jams in the valve, nothing gets through to the truck. Either results in some frenzied moments! Method B uses what appear to be two hoppers. Actually, one is only a funnel into the truck waiting to be loaded and the other is a true hopper. The material is brought from the real hopper to the funnel by a conveyor belt, and material is *only* delivered to the final wagon when the belt is working. Hence the amount to be loaded can be accurately controlled without fuss or panic, and there are no valves to jam.

THE CONVEYOR BELT

In model form I think it best to ignore either plain belts or belts with buckets, as found in full-size practice. The load will often slide back on a plain belt, even if the rate of rise is very gentle, and buckets are very difficult to reproduce in practical model form. Probably the simplest way is to make ribs on the belt which will retain the load as it is carried upwards. It is also necessary to support the belt under load, and to fit sides to the unit to prevent the material being shaken off the belt by vibration.

The belt itself: A strong ribbon is very satisfactory— $\frac{1}{4}$ -1 inch broad. Care should be taken over the join to avoid any unnecessary lumpiness; probably the best way is to run

a double row of machining across. The ribs can be made in a number of ways. Square aeroplane elastic can be impact cemented to the ribbon or square-section wood can be stapled in position. I have used match-sticks held in place by Bambi staples. The staples should be put through the ribbon first, and I found it best to pre-drill the matches to avoid splitting the wood. With the stapling method there is no need to use glue.

The rollers: The rollers are wood dowel, not less than $\frac{1}{2}$ inch in diameter. Cotton reels can be used if they are out of sight (they are a bit big). They can be made to fit 3/32 inch shafting by wrapping gummed parcel tape round the rod until it will just fit into the reel. Plenty of glue should weld the assembly together. The driven roller works better if it is rubber covered, and lengths of wide rubber bands can be cemented to it. Alternatively, several small rubber bands spaced across the roller will serve equally well. The idler roller does not need this treatment, but it does need springing to keep the belt tight. The simplest way of doing this is to make its bearing in the sideframe slotted and to have a length of stiff spring wire bearing against it.

The drive: This is taken from the motor through a worm/worm wheel and spur gearing. A Ripmax worm set and a 3:1 spur gear produce a reasonable belt speed. The motor I used is the Orbit 25—this has a baseplate for ease of fixing and ample power on 3 volts for this job.

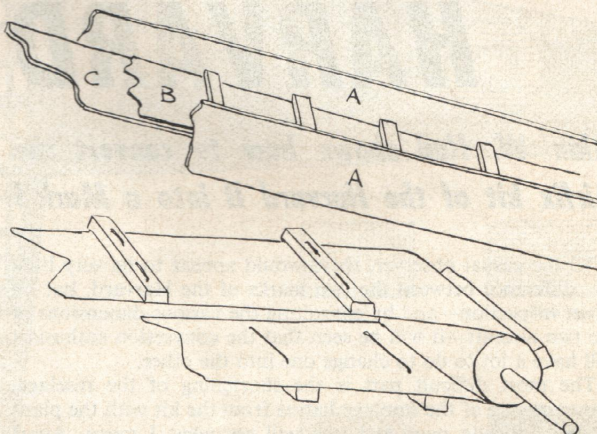
The sideframe assembly: This is a basic 'H' section built up of thick plastic sheet. The crosspiece of the 'H' supports the belt which slides over it. The width between the inside faces of the sides should be about 1/16 inch greater than the width of the belt. Anything more will result in the load getting off or under the belt—anything less can cause binding and undesirable friction.

The primary hopper: This is the real reservoir of material to be loaded. It is, of course, tapered so that its open end comes over the conveyor belt. I think it is a mistake to make it too big: the weight of the material on

the belt can be excessive and can cause the motor to make heavy weather of things. The sides and back of the hopper come down just to clear the top of the ribs on the belt. The front of the hopper, on the other hand, should have a clearance of $\frac{1}{8}$ inch above the top of the ribs where the belt comes out.

The secondary hopper: This is merely a funnel to channel the load into the wagon. If your location demands that the funnel is a long one, baffle plates can be inserted to slow down the material or it will shoot all over the place! Make sure that the angle of these baffles is such that they *do* only slow down the rate of fall and do not act as ledges on which the material piles up.

I have drawn a suggestion of the buildings which could house such an installation. It could load either railway trucks or road lorries. *Copyright, Mike Bryant, 1966*



Top drawing above shows main components of conveyor belt: A—sides; B—belt proper; C—belt floor. Bottom drawing shows the method of stapling ribs to belt. Heading sketches A and B are referred to in the text.

NEWS FROM IPMS

BY the time this is published, the International Plastic Modellers' Society will be nearing the end of its second full year, a year that has been marked by great progress in many directions. Membership in this country has more than doubled and, overseas, similar progress has been achieved. Two new overseas branches have been created where membership has risen to a level to justify this. At home, two new local branches have started to operate and the Society now has a total of seven branches holding regular meetings in the UK.

Due to improvements in the Magazine, with the consequent increase in costs and the rise in postal charges early in the year, the Society regrets that adult subscription rates will have to be increased in 1966. This will mean that members over 18 will pay 42s, and junior members will continue to pay the present 15s a year. Much as IPMS regrets this it has proved unavoidable.

Turning now to more current topics, the London branch held its last meeting of the year at St Mark's Church Hall on Friday, November 26. The meeting was well attended, and among those present was Colin Bramwell who is home on leave from Hong Kong. He writes the 'Hong Kong comment', a regular feature of IPMS Magazine, in which Japanese kits are reviewed as they are released in Japan. The next meeting will be the last Friday in January at the same venue. From now on, all London meetings will be on the last Friday of the month at St Mark's Church Hall, Balderton Street, London, W1.

January, 1966

During December, meetings were held in both Kettering and Birmingham. All future Kettering meetings will be held on the first Sunday of the month at the Keystone Boy's Club, 97 Rockingham Road, Kettering, Northants. All are welcome. A meeting is planned in Hull for January 2, at the Major Oil Co canteen. This is the only address available at present, but people living locally will no doubt be able to find it. A joint meeting of Hull and North East Area members is planned for March, though the date and venue are at present uncertain.

One final reminder: all enquiries about membership of IPMS should be addressed to the Hon Secretary, 23 Chadville Gardens, Chadwell Heath, Romford, Essex.—R.R.W.

Airfix 'Queen' solves dock problem

MANY modellers will loudly defend Airfix kits against the 'toy' tag, and industrial proof of the use of these replicas came recently from the Clydebank ship-building company of John Brown & Co. They are carrying out a £2,000,000 refit on the famous transatlantic liner RMS *Queen Elizabeth*, and their problem was how to fit the 1,031 ft hull of the ship into a 1,000 ft long dry dock.

Basically, the answer was simple—cut a notch in one end of the dock to accommodate the *Queen's* overhanging bow. But, to demonstrate the required modification to the dock, an Airfix model of the *Queen* was built and fitted into a scale replica of the berth intended for it.

AN EARLY MARK OF HARVARD

Alan W. Hall shows how to convert the Airfix kit of the Harvard II into a Mark I

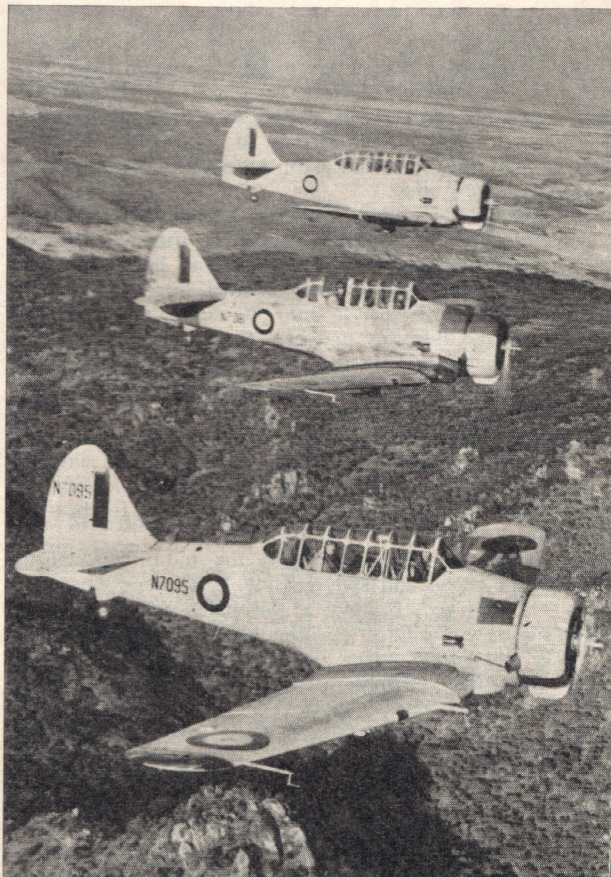
TO the casual observer, there would appear to be very little difference between the two marks of the Harvard, but on closer inspection—and by consulting the various dimensions of the two aircraft—it will be seen that the conversion enthusiast will have a lot to do to change one into the other.

The most difficult part is the shortening of the fuselage. Compare one of the fuselage halves from the kit with the plans on the opposite page and you will see what I mean. Apart from this, the Harvard I had a different rudder, rounded wing tips and changes on the engine nacelle. Not one of the easiest conversions, I think you will agree.

The Airfix kit of the Harvard is a good one. It has the necessary thickness of material in the fuselage to cut a section out and file down the change of dimension. It has well moulded parts and is, in my opinion, one of the best kits in the cheaper range that the company has produced. Apart from this, almost every air force in the world has at one time or another used the aircraft for training and it is still going strong, both in its home country and with NATO.

Reference on the Harvard II is not difficult to find, but the Harvard I presents a little more of a problem. The *Aeroplane Spotter* provided a great deal of information and *Aircraft of the Fighting Powers* was another valuable source of reference. The plan in this publication was inaccurate, however, and should not be consulted when making the conversion. There are also inaccuracies in some of the wartime silhouettes of the earlier mark of Harvard. I found, for example, that several of these showed the aircraft having a straight trailing edge to the wing and, although this cannot be confirmed, there were possibly some aircraft produced in this manner. The more common aircraft had the same trailing edge as the Harvard II, that is slightly tapered forward, and the conversion I have completed as my example has this feature.

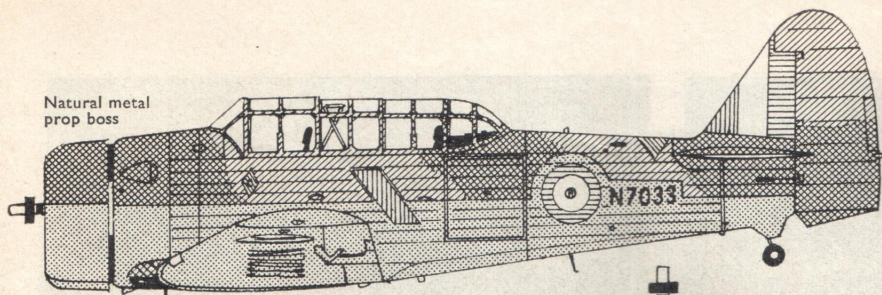
STAGE 1 Follow the kit instructions to stick both the fuselage and wing outer panels together. Do not complete the fuselage-to-wing joint until later. Wait till all parts have dried thoroughly, then cut off $\frac{1}{8}$ inch from the nose and remove the remains of the ventral radiator. Remove all rivets from the fuselage and fill the holes for the radio mast and the stand slot under the fuselage.



Three of a kind. Each of these Harvards, which were operated by the Commonwealth Joint Air Training Scheme in Southern Rhodesia during the war, has a different paint job. All were basically trainer yellow, but individual markings differed considerably. The aircraft nearest the camera, N7095 'N', is featured in the drawings.

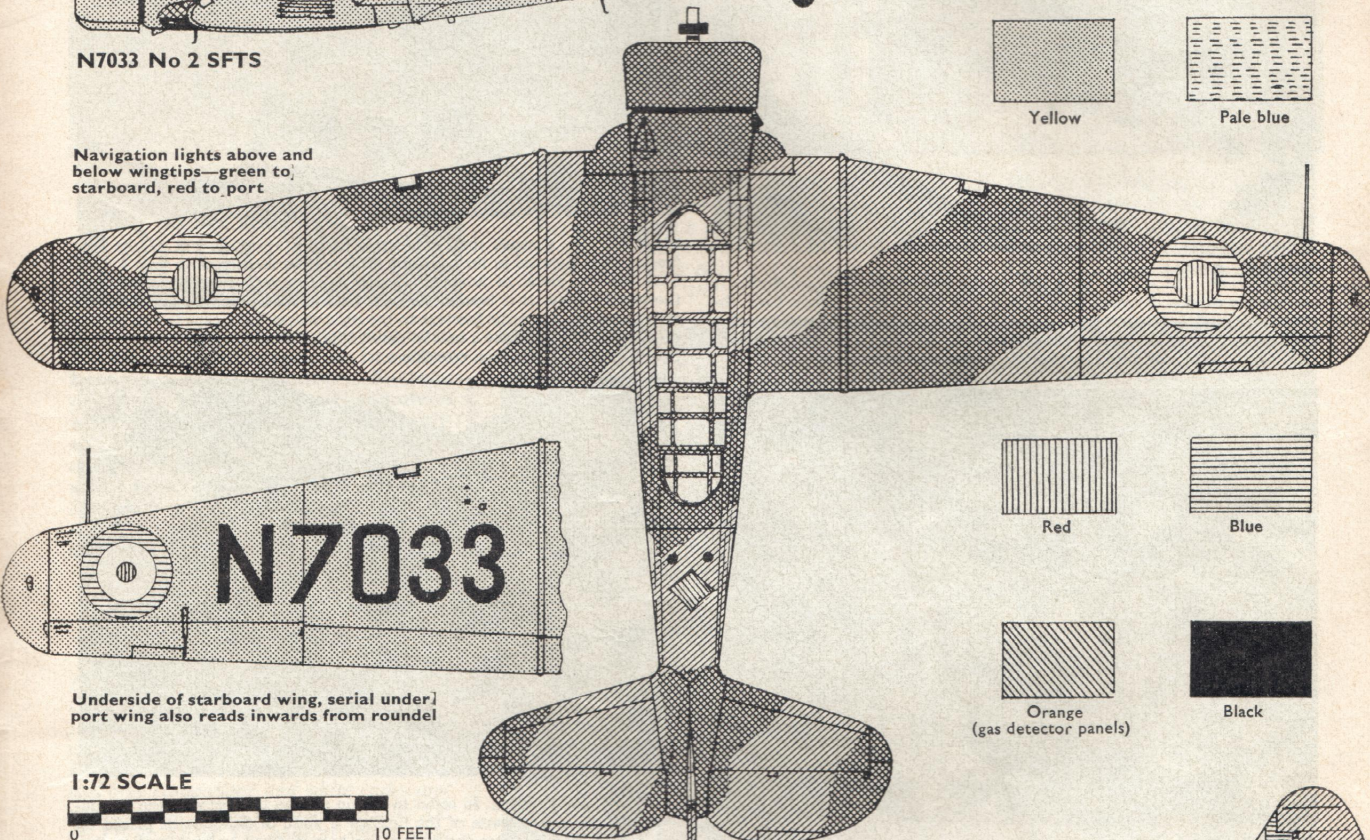


Natural metal
prop boss



N7033 No 2 SFTS

Navigation lights above
and below wingtips—green to,
starboard, red to port



Dark green



Dark earth



Yellow



Pale blue



Red



Blue



Orange
(gas detector panels)



Black

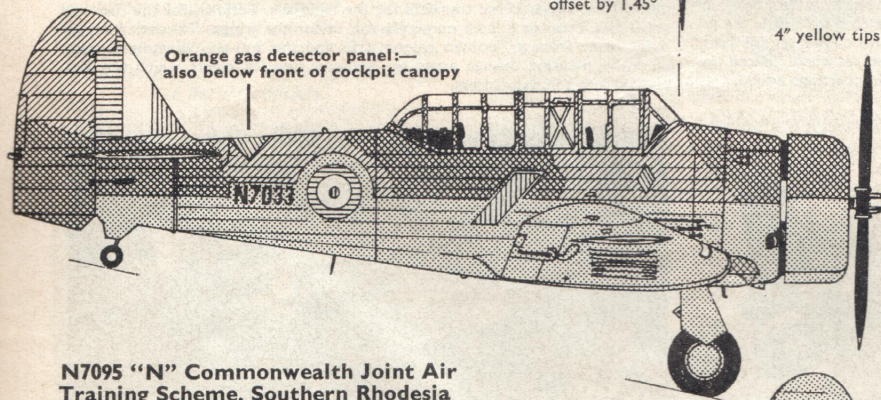
Underside of starboard wing, serial under
port wing also reads inwards from roundel

1:72 SCALE



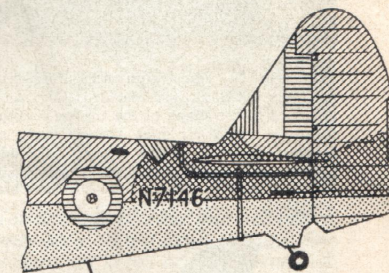
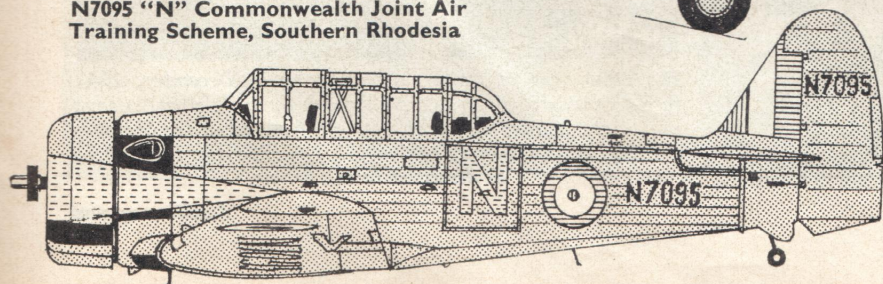
Note fin and rudder
offset by 1.45°

4" yellow tips



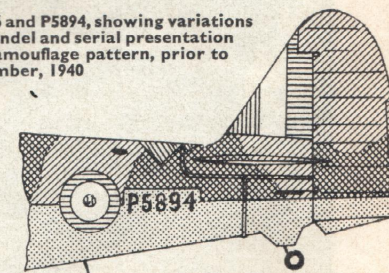
Orange gas detector panel:—
also below front of cockpit canopy

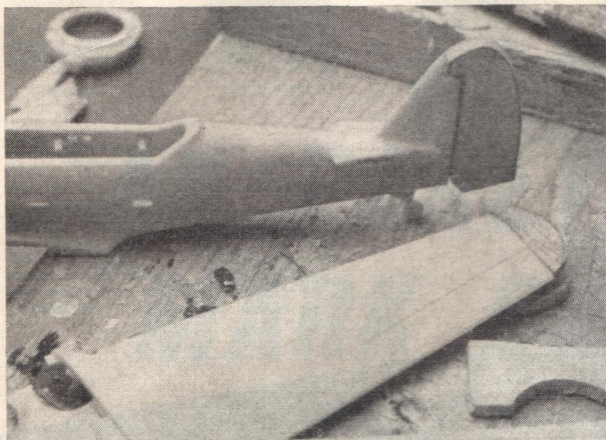
N7095 "N" Commonwealth Joint Air
Training Scheme, Southern Rhodesia



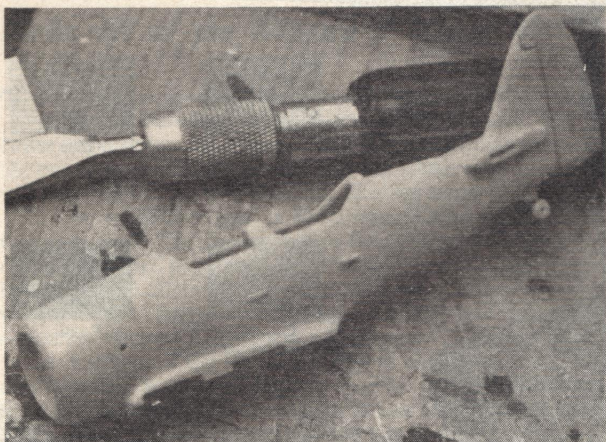
N7146. This machine also carried
orange gas detector panels on its
upper wing surfaces

N7146 and P5894, showing variations
in roundel and serial presentation
and camouflage pattern, prior to
December, 1940

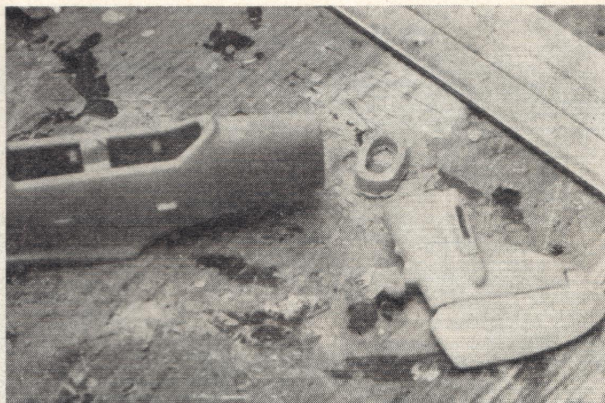




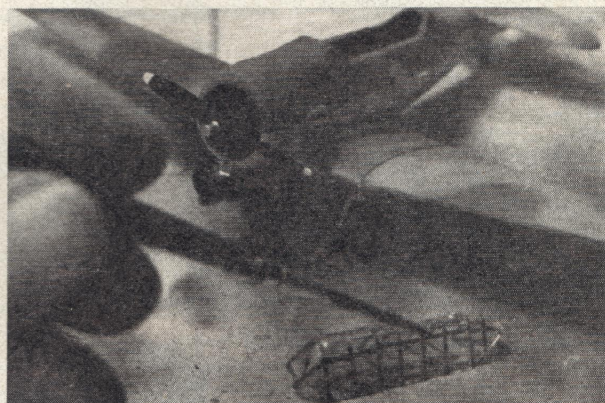
STAGE 2 Cut off the wing tips on the line of the ailerons. Similarly remove the rudder. Replace each with $\frac{1}{8}$ inch balsa cut to shape from the plans. File and sandpaper each part into the correct aerofoil section, after they have dried, and complete the operation by applying a liberal coating of clear dope mixed with talcum powder as a filler.



STAGE 4 The engine nacelle is then sandpapered into a shape that does not taper. Look at the plans for details. An air cooler is cut from scrap plastic and filed to the shape of the ventral nacelle line. Use a circular needle file to make the actual air inlet. Other details, such as the oil cooler on the port fuselage and the engine exhaust, are added and the tailwheel placed in position. The fuselage and wings are joined and the undercarriage added.



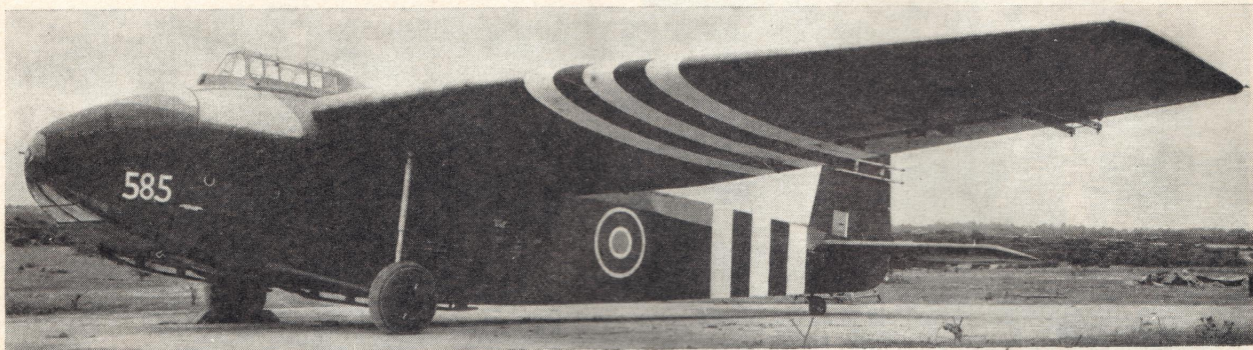
STAGE 3 Consult the plan before cutting a section out of the rear fuselage just forward of the tailplane. This will be slightly more than $\frac{1}{8}$ inch. Stick the two pieces of fuselage together again and wait until the joint has thoroughly dried. It is best to leave the model for at least 24 hours before starting to rub down the fuselage to the right shape. Take care to rub gently, otherwise you may make a hole in the fuselage side as the plastic will be very thin after the job has been completed.



STAGE 5 Painting. In order to obtain a clean line between the camouflage and the yellow parts of the fuselage a piece of Sellotape is placed on the correct division after the yellow has been painted and allowed to dry. The canopy is painted last, separate from the fuselage. It is then stuck in place. I used HisAirDec transfers for the roundels, Letraset for the fuselage serial and Yeoman $\frac{1}{8}$ inch numerals for under the wings. The red fuselage stripe came from a Yeoman colour strip and the anti-gas 'diamonds' were made by painting orange areas on Yeoman transfer sheets which are not divided into separate letters.



The camouflage of trainer aircraft prior to December, 1940, varied considerably—in this photograph three different schemes can be seen. Three of the aircraft are featured in the drawings overleaf. Left: The completed model of the Harvard I, converted as described in this article.



photoPAGE

Because of the encouraging response shown to 'photopage', it has now become a monthly feature. Further pictures, particularly of squadron aircraft, will be published as available. We would be pleased to consider any contributions from readers, and a free Airfix kit will be awarded for each picture used. 'Photopage' needs your support, don't forget. We are still awaiting that camouflaged Heyford shot!

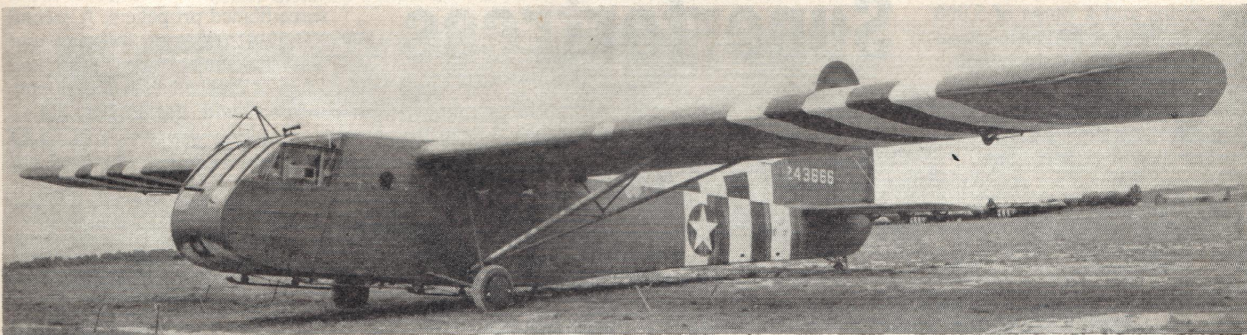
CAPTIONS: M. J. F. BOWYER

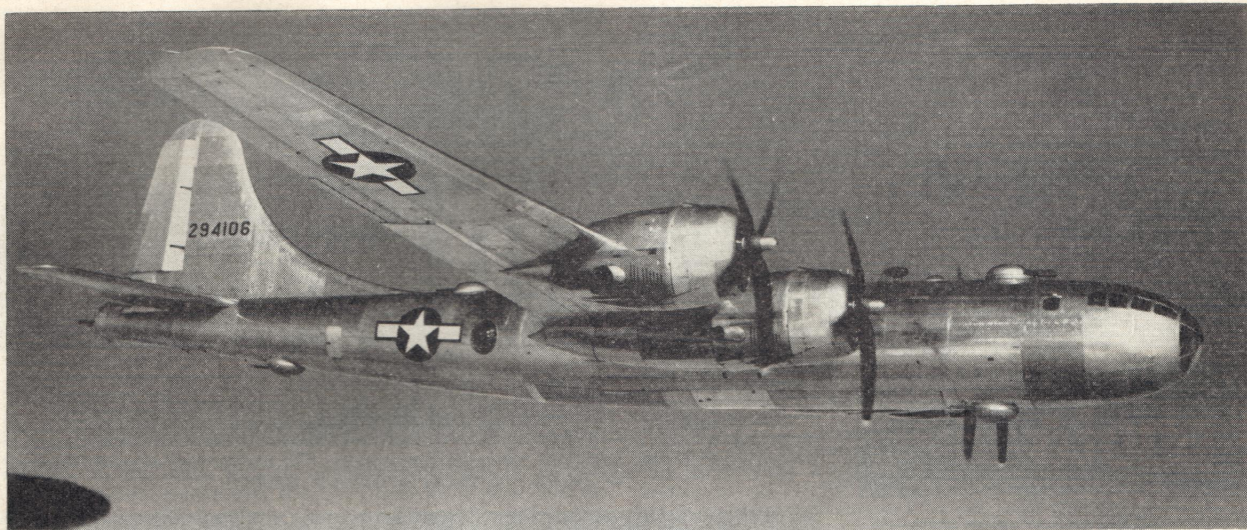
By no means the least interesting of the three is the Beaufort (right) flying over a familiar landmark in Egypt. The machine, a Mk 1, poses some interesting problems. It seems to be wearing two-tone brown and blue camouflage and white codes and spinners. The squadron codes could be XE or YE or XF or YF, none of which seem to be on record amongst collectors. It would be tempting to suggest, too, that the aeroplane hails from 39 Squadron. The photograph is of post-1943 vintage, probably. Any reader any suggestions for a better caption?

Our exciting collection this month came from Mr K. W. Pickett. The superb shot of a Hamilcar glider (above) depicts LA712, which was apparently used on the evening of D-Day and again on September 17, 1944, when it took part in the Arnhem landing. It wears a green and brown finish with black sides, etc. The partly obscured fuselage serial was red. 585 on the nose was a marshalling number. The background scenery suggests the picture was taken at Tarrant Rushton.



243666 is a Waco CG-4A Hadrian glider (below), used on or about D-Day. Her undersides appear to be a lightish grey and the upper surfaces may have been a shade of fawn, for the toning on the photograph seems to indicate they were not green or olive. Many of the C-47s of this vintage in Britain were thus coloured.





294106 was a B-29A-30-BN. B-29As were built at Renton, while B-29s were produced at Wichita, by Bell in Georgia and the Martin Company in Omaha, Nebraska.

THERE surely cannot be any denying that the Airfix Superfort is one of the finest kits of all time. Rumours that had circulated concerning it almost equalled those preceding the arrival of the first actual B-29 in Britain, and the kit's release reminded me of that exciting event. Used as one was to seeing arrays of B-17s setting off for Europe, there was a nagging hope that one day one might spot the mighty Superfort among the formations. This was not to be; but when one of these huge impressive aeroplanes landed at Basingstoke for viewing by the crews of the 91st Bomb Group there were others (uninvited) who also enjoyed the scene! A few other B-29s crossed our coasts, then came the 60 forming the vanguard of the Strategic Air Command; aircraft that were rotated on to British bases for many years, demonstrating that American power was a force to be reckoned with in Europe.

The B-29 was a remarkable machine. In spite of its immense size—it had a span of 141 feet—the B-29 had a top speed getting on for 400 mph, remotely controlled turrets (which feature required much ingenuity and development), two large pressurised cabins and a range of 5,000 miles. In current language it can be reckoned as a second generation four-engined bomber, or the American equivalent of the Vickers-Armstrong Windsor.

In the 1930s the USAAC realised a need for ultra long-range bombers. Boeing's XB-15 and the Douglas B-19 were results of such requirements, of which the ultimate was to be the B-50. In March 1938 work began on a pressurised version of the B-17 Flying Fortress along the lines of the Boeing 307 Stratoliner, but there were difficult problems particularly concerning defending gunners. These were solved, eventually, by linking the two pressure cabins by a long tube, leaving one cabin for the pilots and navigator, etc, and the other for the gunners aft.

As design studies grew in number so did the size of the projected aeroplane. To obtain the range large fuel tankage was required, leading to long span wings necessarily of high aspect ratio to offer the required performance characteristics. At the end of 1939 an official specification was drawn up for a bomber along the projected lines, needs being modified in accordance with lessons learned in the war in Europe. Boeing's contender, the Type 345, was tentatively ordered in June 1940 and, from tenders made, the Boeing XB-29 and Consolidated XB-32 were

proceeded with from August, 1940. The world situation prompted large orders to be placed off the drawing board, and in 1941 250 B-29s were on contract. As a result of early ordering and associated planning the B-29 was built and in operation within four years, an outstanding achievement, and saw over a year of operational service in the Far East war.

The first XB-29-BO, 41-002, first flew on September 21, 1942, by which time 1,664 were on order. Unarmed, it had the customary green/grey finish of American bombers and its four Wright R-3350-13 engines drove three-bladed propellers. A second XB-29 41-003 soon followed and was the subject of a grim end when it crashed into the Boeing

works killing many people concerned with the project. It had suffered an engine fire, a misfortune that was to dog the B-29 throughout its life. The third machine 41-18335 was used for armament research, and also crashed.

Realising the radical nature of the new bomber, 14 YB-29s (service evaluation aircraft with Wright R-3350-21s) were acquired, and on May 1, 1943, at Smoky Hill, Kansas, the 58th Bomb Op Trng Wg(H) was activated to use them. By now new factories and a host of subcontractors were applying themselves to a massive production programme. The first YB-29-BW,

PROFILE

The story behind the Superfortress

41-36954, flew on June 26, 1943, at which time a new defensive system was being worked out, wherein turret operations were optically controlled from large astrodomes.

Early intentions were to use the B-29s against Germany, replacing the B-17, but superior range rendered the aircraft ideal for attacks on the Japanese mainland from both distant bases and, later, from the Mariana Islands in the Pacific. Bomb Groups established to operate the B-29s included the 40th, 444th, 462nd, 468th and 472nd to which the first 150 aircraft were allocated. The next machines came under the command of the 73rd (BW)(H) whose Groups (497, 498, 500) operated from the Marianas. The 501st and 502nd were based on Guam and the 504th and 505th on Tinian.

Early B-29s had a range of about 3,700 miles, a 12,000 lb bomb load and could carry bombs of up to 4,000 lb. Changes in fuel capacity, a foot extension to the wing centre section and production modifications resulted in the B-29A. There were various arrangements of the guns until the late-war B-29 arrived with a four-gun turret forward, three other two-gun turrets and two machine guns in the tail. From the latter position the cannon was removed due to feed trouble. A further modification resulted in some B-29s having streamlined forward dorsal turrets similar to those of the later B-50.

B-29s began to arrive in India and China in March/April 1944. To support such a large aeroplane the requirements were massive, and at first B-29s spent their time crossing the "Hump" with supplies for China. The first raid was made on June 5, 1944, against Bangkok, for which the crews were largely ill-prepared. Five B-29s were lost, mainly to bad weather. Although conceived as a high-altitude day precision bomber the B-29 found valuable employment at night, as on the second raid, delivered against Japan on June 15. From the Marianas raids began in November. Whereas high level raids meant reduced loads and brought about engine overheating, the lower level raids with incendiaries against largely wooden buildings brought spectacular results.

During 1945 the strength of the 20th Air Force, under whose control the B-29s came, reached twenty-one Groups. Over 500 B-29s were operating at one time or another, usually at night and sometimes minelaying. Amongst them was a handful of F-13As, B-29s converted for photo reconnaissance. But amongst the specially modified B-29s those of the 509th Composite Group were destined to be the most famous, and to change the course of history.

In 1944, fifteen B-29s were specially modified to carry large missiles for ballistics trials, leading up to the first atomic bombs. These aircraft went to the 393rd Squadron which, in May 1945, moved to the Marianas to work up in standard bombing raids, although mostly unarmed. In the early hours of August 6, 1945, B-29-45-MO, 44-86282, *Enola Gay* took-off for the epoch-making attack on Hiroshima. Unlike many of the Group's



Top: B-29A-5-BN, 42-93844, the first of this block. Above: Incendiaries falling from B-29s over Japan. Z is their Group marking, and on their fuselages are carried individual numbers not related to their serials.

aircraft, this machine was all-silver and had a twelve foot diameter circle three feet wide painted on its fin. Originally it bore an arrowhead within this, but a six foot black 'R' replaced it to lessen enemy attention in the unarmed aircraft. '82' appeared in black on the aft fuselage four feet high, and 'ENOLA GAY' in one foot high black letters on the port side of the nose only.

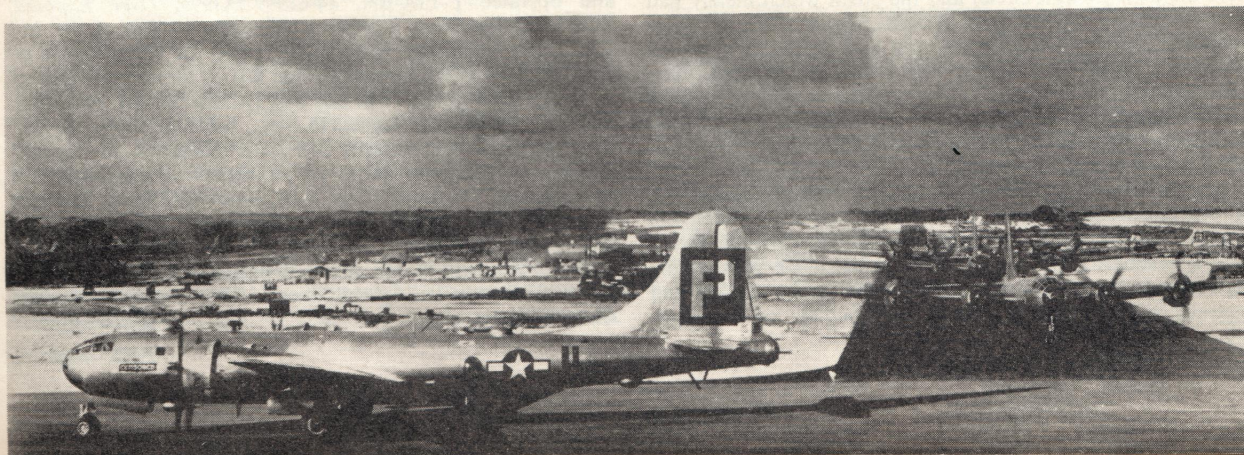
After the war the aircraft of the 509th Group reverted to the circle and arrowhead motif. B-29-60-MO, 44-86430, was one such with black undersurfaces. Unarmed, it was also shorn of astrodomes, and had a small grey radome between the two bomb bays. BF-430 appeared on the side of the nose—an unusual feature—and beneath the wings, yellow in both instances. The insignia of the 8th Air Force appeared on the stabiliser fillet. A yellow arrowhead was painted pointing forward within the black fin circle. Many of the 20th Air Force B-29s carried colourful nose insignia, some of which are illustrated on page 140 Bruce Robertson's *Aircraft Camouflage and Markings 1907-1954*.

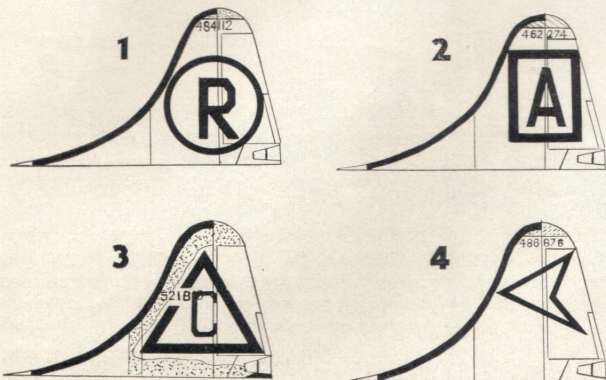
For night operations many of the B-29s had their undersurfaces and half of the fuselage sides painted matt black, which terminated in wavy lines varying between aircraft. Such colouring was common, even into the 1950s, and eight of the nine B-29s making a goodwill visit to Marham in June, 1947, wore such colourings. On their fins they carried their Group crest, but no large identity marking. Their fuselages bore such buzz markings aft as BF-294 and BF-298 in yellow, repeated large size under the port wing. An interesting feature was a long radar wing under the fuselage between the bomb doors.

B-29s had previously been based at Marham when in April,

Continued on next page

Under a stormy Pacific sky, B-29s of the 20th Air Force taxi out for an attack on Japan.





Top: 'Enola Gay' the B-29 that dropped the first atom bomb on Hiroshima. Aircraft with black undersurfaces is just visible on extreme left. Also illustrated is a selection of tail markings carried by B-29s of the Strategic Air Command, 1948-1951. 1. 484112 in July, 1948, of No 28 BG had a red fin tip and black R in a circle on its fin. The width of the circle and the shape of the R varied between aircraft. 2. 462274 of No 301 BG in June, 1950, with an orange fin tip identifying it as from the 32nd Squadron. Again, the shape and positioning of the Group marking was variable, and basically was 'A in a square'. 3. The B-29s of 509 Group often had a range of markings, and 521815 was no exception when recorded in March, 1951. The red tail areas were arctic survival markings. There was no standard application of tail markings. 4. The 307th BG in Britain in March, 1949, had a hollow arrow-head motif as its Group marking. Some aircraft had a regular shape, on others the motif had sides of irregular length. 486676, all silver, had a light blue fin tip to identify its squadron.

PROFILE—Continued

1946, four arrived for bombing trials under 'Project Ruby' to use large special bombs in trials against German U-boat pens. These B-29s had black lower surfaces, were turretless and bore no special markings. B-29-97-BW, 45-21752, was one of them.

One of the most fascinating aspects of the B-29s to any modeller must be individual and unit markings which were as interesting as those of the 8th Air Force B-17s of former years and almost as colourful. In the-Pacific fighting the various units were identified by large hollow square and circle fin markings in which was usually painted an identifying letter. 'R' in a circle was, for instance, used by the 6th Bomb Group, 313th Wing, based on Tinian. Similar symbols identified post-war Bomb Groups rotated to England on 90-day tours. The first to come were the 28th (R in a circle) and the 307th which merely had its unit crest on the fins of its aircraft. Serials at the fin tip or midplaced were invariably black, and buzz markings if carried were black on all-silver aircraft and yellow on the black/silver ones. Each Group usually allocated a colour to each of its three squadrons, which they usually applied to the fin tips of their B-29s. Generally the colours were red, blue and yellow but there were the usual exceptions.

From a paintwork point of view the 2nd Bomb Group, which arrived at Lakenheath from Tucson, Arizona, in August, 1948, was one of the most interesting. Its Group marking was a hollow fin square applied as large as possible, a gap in its leading edge allowing space for the serial number to be applied and centrally sited. Squadron colours were painted on the nose-

wheel doors, a rectangular panel on the cowl side and on the fin tip. Two bands in the same colour encircled the fuselage ahead of the side astrodome. B-29-25-MO, 42-65274, of the 96th Bomb Sqn carried red markings and in script on the nose 'BAD PENNY'. Like most of the Group's aircraft this had the old type four gun forward turret. B-29A-75-BN, 44-62320, of the same squadron had the modified B-50 type forward turret. A retractable grey radome was slung amidships in the centre fuselage section which, on account of its strong construction, appeared to be of shining metal.

Satan's Mate 44-62315, a B-29A-75-BN, had blue Squadron colours, old style front turret, and came from the 49th Squadron. B-29A-35-BN, 44-61558, standing with her when I visited the Group bore evidence of once having had 39 on her rear fuselage and 42-65370, a B-29-30-MO with black undersurfaces, once had a 'K in a square' on its fin. B-29-65-BW, 44-69818, with yellow squadron colours had once carried '33' aft on the fuselage. All these B-29s carried BF and the 'last three' as fuselage buzz markings. One of the 307th BG aircraft was B-29-70-BW, 469909. This merely bore the Group crest on its fin and the squadron colour (green) on its fin tip. 'M M2' had once been painted on the rear fuselage.

Close viewing of these machines always revealed much of interest. In the case of the aforementioned *Bad Penny* there was evidence of her once having twelve mission bombs painted on her nose. The rear fuselage had carried '31' and the tail 'G in a triangle'. Various new skinning panels bore testimony to her having been damaged in action over Japan. On the port side of the nose there appeared a red-white-black triangle with a devil and bomb, insignia of the 2nd Bomb Group. Three years later at Marham I again came face to face with *Bad Penny*, living up to her legend, when close scrutiny of a Washington—the RAF had given her this name—revealed it to be 265274 again, now WF442 and coded KO-J of 115 Sqn, later seen as WP-P of 90 Sqn. B-29A-35-BN, 44-61678, which I had seen with 20 Sqn USAAF when visiting the 2nd BG also arrived as a Washington, WF435, coded FB-L with 35 Sqn. *Forever Ambling*, a B-29A-70-BN, 44-62231, once of the 20th, also returned as WF503 WP-B. The Washingtons were all silver except for one, and carried squadron letters on the rear fuselage and an individual letter on the fin. Like their American counterparts, they sometimes had fin tip colours, wearing their Flight colour in this position. WF503 had a red fin tip and red nosewheel doors. Codes and serials were black.

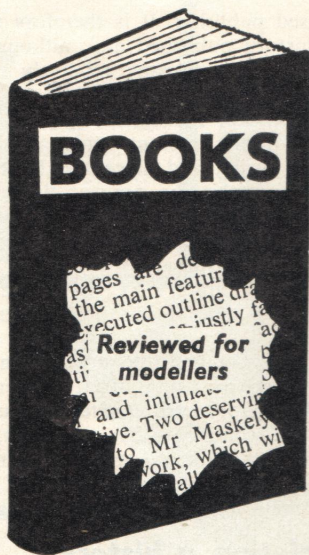
The first B-29 units to rotate to Britain often had an F-13A reconnaissance aircraft with them, like 44-61986, an F-13A-BN, serving the 2nd BG. It was silver and black, but unusual in having FG-986 on its fuselage in red and had, in fact, been used for the Bikini atom bomb trials. A variety of fin symbols identified the Groups. The 301st, here at the end of November, 1948, had a V in a triangle, as carried by 44-62034 which had a red fin tip. This unit had four squadron colours incidentally, and operated F-13A-BN, 44-61999:FG999; *Over Exposed*. This was silver/black and wore the tail markings of the 2nd Group. At Sculthorpe in February, 1949, the 92 BG could be seen, with W in a diamond on the fins of its aircraft. One of its B-29As was 44-61617 of 327 Sqn (yellow fin tip), a machine that later operated in Korea. In May, 1949, the 509th BG was here, with red tail surfaces and outer wings on its aircraft, many of which were shorn of all defensive armament. An example was the black/silver B-29, 44-87769. When the unit returned some time later its aircraft carried C in a triangle on their partially red fins.

Profile will next month continue suggestions for B-29 markings and view the wide possibilities of kit conversions with the Airfix B-29.

M. J. F. Bowyer

AIRFIX magazine

NEW BOOKS



Must for model makers

BRITISH MILITARY AIRCRAFT SERIALS 1912-1963, by Bruce Robertson. Published by Ian Allan Ltd, Terminal House, Shepperton, Middx. Price 25s.

THIS book is a compilation of the serial numbers and final fate of all aircraft known to have been ordered or impressed for British military service. Bruce Robertson, through what must have been years of patient work, has provided a book which has long been wanted by the aircraft enthusiast, and above all the model maker with a bent for conversions of plastic kits. If one can describe a list of numbers as a work of art, then this is it!

With a little delving, the reader can easily find how many of a certain aircraft type were produced for the services, information on rare aircraft impressed for war-time service and all the gliders used by the ATC for training purposes, to mention but a few. The true value of this book does not reveal itself until put to the practical test. It is a must for any serious model maker.

More on slot racing

YOUR BOOK OF MODEL CAR RACING, by Kenneth Gee. Published by Faber and Faber Ltd, 24 Russell Square, London, WC1. Price 13s 6d.

YET another new book has been published in this country on the subject of slot racing. This is a further title in the well-known Faber and Faber 'Your Book' series, and is aimed mainly at a younger age group. The 90 pages describe the basic principles of model motor sport, and some of the simpler technicalities. Included are a number of maps of actual racing circuits that may be modelled, and quite a lot of information is given about real-life motor racing. The text is also illustrated by a number of photographs but, suffering perhaps from being aimed at under twelves, has something lacking so far as accuracy is concerned.

For example, the Monza road circuit in Italy does not have banked corners, and neither is it, 'generally regarded as the fastest in the world'. Enna, in Sicily, is the fastest true road circuit, and Spa-Francorchamps in Belgium is faster than Monza. A drag enthusiast would never describe

his racing circuit (which isn't a circuit for a start) as a 'rail'. His car is the 'rail', his track is his 'strip'. No, you can buy far better than this.

Wars at sea

NAVAL WARGAMES, by Donald F. Featherstone. Published by Stanley Paul and Co Ltd, 178-202 Great Portland Street, London, W1. Price 30s.

'FIGHTING sea battles with model ships' is the succinct sub-title of this new book by Donald Featherstone, author of 'Wargames', published in 1962, which dealt with model soldier battles. Now, with the aid of 'Naval Wargames', the enthusiast can carry the fight to the enemy's shore, cut his trade routes, and challenge his fleet—all on the dining room table! For in 224 packed pages Mr Featherstone has rounded up just about everything the armchair admiral needs to know, including where to buy—or how to make—his warships, how to grapple, how to torpedo, how to board, and how to ram the enemy without being scuppered himself. And it's all done with dice, cards, or mathematics.

The author traces the naval wargames idea from the 'Battleships' pencil-and-paper game that many youngsters play at school through commercial boxed games (eg, Dover Patrol) to the complete table-top game, which could be anything from a Trafalgar to a Graf Spee encounter. All periods are covered, starting with 'ancient' battles involving galleys and triremes, and ending with World War 2. Other chapters are devoted to combined operations—involving soldiers and ships—research, and discussion of operational factors. Of particular interest to the keenest enthusiast are the complete rules worked out by Fred Jane (of 'Jane's Fighting Ships' fame) at the turn of the century, along with Fletcher Pratt's modern wargame rules. This latter expert had a scientific approach and sea battles to his rules could involve 60 people a side manoeuvring ship models on a large ballroom floor. Too bad if you don't have a ballroom! Suffice to say that these rules are good, but involve a lot of preliminary calculation. We are still working out formula number one!

Anyone who has played 'land' wargames should read this book—likewise anyone who makes ship models. For example, the little Airfix Series 1 sailing ships are ideal for a wargames fleet. We think 'Naval Wargames' might well start off some new ideas. After all, Airfix have just issued a landing craft, and at least one other manufacturer makes PT boats to the popular OO/HO scale. Plenty of scope for combined operations there.

Bargain package

LOCOMOTIVES OF THE LSWR, PART 1, by D. L. Bradley. Published by the Railway Correspondence and Travel Society, and available from Mr N. J. Claydon, Hon Asst Publications Officer, 19 Dene Court Road, Solihull, Warwickshire. Price 25s post free.

THE London and South Western Railway originated in 1834 as the London and Southampton Railway, and eventually formed the major constituent of the Southern Railway in the 1923 grouping. Not so much is heard about the early locomotives of the LSWR, although in 1847 for instance, average train speeds were the equal of other more publicised trunk lines, such as the GWR and LNWR. The story of the LSWR locomotive stud is interesting, and in Part 1 of this admirable book

Continued on next page

NEW BOOKS—Continued

142 pages of close text and over 100 illustrations are required to cover the early period of Joseph and W. G. Beattie, the North Devon Railway and various miscellaneous items. Part 2, dealing with the later Adams, Drummond and Urie engines will follow later.

This monumental work is fully up to the high standard to be expected from RC & TS publications. Perfectly acceptable soft covers no doubt help to keep the cost down to 25s, and the bargain package is completed by a well-drawn route map.

Third edition

THE AIRCRAFT OF THE WORLD, by William Green and Gerald Pollinger. Published by Macdonald & Company Ltd, 2 Portman Street, London, W1. Price 95s.

THE third edition of this book is equally as good as both previous ones, containing as it does a complete list of all aircraft flying in the world today. The various types, and there are many hundreds of them, are divided up under their nationalities. Each has a short history and either a plan or photograph, or both. A new section has been devoted to Rotorcraft and, more important still, there is a section containing all the world's veteran and replica aircraft currently in flying condition.

Although expensive, the aviation enthusiast must have in his library a book of this nature because of its comprehensive coverage of the world's aircraft. There can be nothing but praise for such a worthy volume, which is such an essential part of the enthusiast's equipment.

For laymen or enthusiasts

THE HIGHLAND RAILWAY, by O. S. Nock. Published by Ian Allan, Terminal House, Shepperton, Middx. Price 35s.

THIS is a highly readable account of a very interesting Scottish railway. From Perth in the South, its main line crossed the Grampians to Inverness. Westwards from Inverness it went to Kyle of Lochalsh, the road to Skye, and to the north it became Britain's most northerly railway with its route to Wick and Thurso.

O. S. Nock confines his story to the period up to the grouping, when the Highland became a constituent of the LMS. He describes events leading to the formation of the company and the construction of the line, further expansions and proposals that came to nought. As is to be expected, there is a lot of information about the railway's equipment, particularly the locomotives, and the engineers responsible for them, and a chapter is included on locomotive performance. The publishers rightly describe the book as written in a style which will appeal to the layman but which has been compiled with the accuracy the enthusiast demands.

There are 177 pages of text, 32 pages of illustrations, an excellent colour plate and a brief index but, surprisingly, no route map.

Bomber background

9 SQUADRON, by T. Mason. Published by Beaumont Aviation Literature, 11 Bath Street, London, EC1. Price 22s 6d.

ONE often wonders what happens to the many requests for information on this or that squadron or unit that appear in the correspondence columns of the national aeronautical press. Many histories are written following these requests, but few reach production status with a

recognised publisher. It is therefore more than welcome to see a history published and, although Beaumont Aviation Literature is a company relatively new to publishing, the effort is more than worthwhile.

Flying Officer Mason, the author, has given an excellent account of the present senior RAF bomber squadron's activities during and since the First World War. Of particular interest is the pre-war flying with aircraft such as the Virginia and Heyford. Appendices give details of all the aircraft operated by the squadron, their serial numbers and eventual disposal. A list of all decorations, including F/Sgt G. Thompson's VC, is shown, plus the names of all commanding officers and bases from which the squadron has operated.

An otherwise first-rate publication, this book is marred by one annoying thing. What happened to the proof reading? Throughout each chapter the number of typographical errors are comparatively numerous, and the reader has sometimes to work out what is meant by various passages. It is to be hoped that any reprint of the book will be carefully surveyed before production begins.

Completing a history

THE GREAT WESTERN RAILWAY IN DEAN, by H. W. Parr. Published by David & Charles (Publishers) Ltd, 39 Strand, Dawlish, Devon, and distributed by Macdonald & Co (Publishers) Ltd, 2 Portman Street, London W1. Price 35s.

WITH the publication of part 2 in the series, H. W. Parr's history of the railways of the Forest of Dean is now complete. Part 1 dealt with the largest of the Forest railways, the Severn & Wye. Part 2 covers the remaining tramroads and railways that were later absorbed by the GWR.

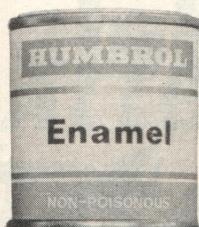
Railway development in the Forest of Dean is both obscure and complex, but the author not only unravels the subject most successfully, he also presents it in a very readable form. A large well-drawn folding map helps the reader follow the story, which revolves round many separate undertakings all intent on developing the ancient industries of the Forest. Much has now passed into history, but it is certain that this book will prompt many readers to look for the few remaining pockets of resistance and remains.

A very comprehensive index is included in the 168 pages of text. Also included are no less than eight pages of references, an illustration of the author's thoroughness in research. Among the illustrations are reproductions of 38 photographs and a fine coloured frontispiece. The book is truly a model of its kind.

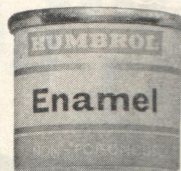
Model flying

AEROMODELLING, by R. H. Warring. Published by Museum Press Ltd, 26 Old Brompton Road, London, SW7. Price 25s.

THIS comprehensive handbook for model aircraft enthusiasts covers all types of flying model aircraft, including glider, rubber powered, free flight powered, control line and radio-controlled models. Ready-to-fly models are dealt with, but detailed instructions are given for basic methods of construction, covering and doping, as well as for selection and operation of engines. Also featured are the techniques of trimming for flight, and a list of fault-finding instructions will be of use to the beginner. The book is well illustrated by numerous line illustrations, and should be of invaluable use to a plastic modeller wishing to broaden his horizons.

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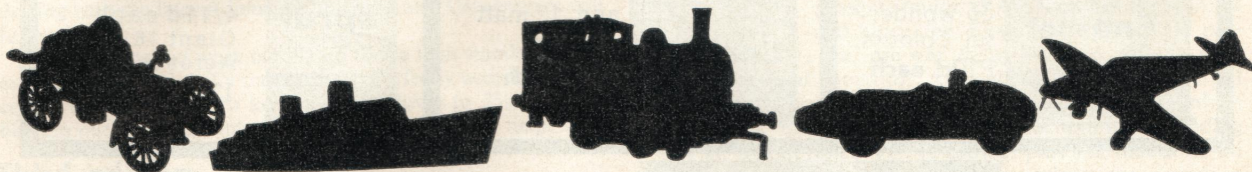
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New kits and models



RENAULT FROM RENAULT

ONE of the most exceptional car kits it has ever been our pleasure to review is the new French Heller 1:20 scale model of the Renault 16.

It comprises 192 pieces, moulded in a mixture of steel grey, red, transparent and chromed plastic, and the great feature of the model is the wealth of moving parts. All four doors open and close, the rear lid hinges upwards, there is a folding rear parcels shelf, the bonnet opens to expose intricate mechanical detail, the wheels revolve, those on the front steer, and even the seat backs are adjustable!

This is by no means an easy or quick model to build (ours took some 20 hours to complete) and there are a great number of minute parts to be fitted—even in the large 1:20 scale. Interior trim and moulded detail is superb, chromed glove compartment catches, foot pedals, hand controls, window winders and door handles all being depicted. Thin chrome plastic strips reproduce the external trim of the prototype, and other features include soft plastic tyres bearing accurate Michelin 'X' treads, full suspension details, exhaust system, disc brakes, lights, chrome bumpers, handbrake, wireless aerial, clear windows with accurate chrome surrounds, and red tinted transparent parking lights.

Only things we could find on the debit side were the rather vague, though vast, instructions (they lost something in the translation), and the absence of drive shafts. Nevertheless, this is a fine model and really something for the car kit connoisseur. It is obtainable in this country from Renault Limited, Western Avenue, London, W3. Price is excellent value at 32s 6d. D.C.N.

BEST TANKS YET

JUST how rapidly the Japanese kit manufacturers are making their mark in the model world is amply demonstrated by the two latest 1:35 scale tanks to come to hand in the Tamiya series. Depicting the Russian T10 and the British Chieftain, respectively, both kits are remarkable examples of clever Japanese design which takes full advantage of the large scale to do justice to the prototypes.

Best of the pair, in terms of both accuracy and performance, is the T10, which takes the palm as one of the finest tank kits we have ever seen! Everything about the model is well nigh perfect, from the turret shape and fittings right down to the track pattern and road wheels. In fact, this model stands very close scrutiny against published photographs and drawings of the real thing, with such features as the irregular road wheel spacing correctly duplicated, even though this is almost imperceptible unless you are looking for it. All the parts fit together easily and there was no evidence of flash at all on our sample.

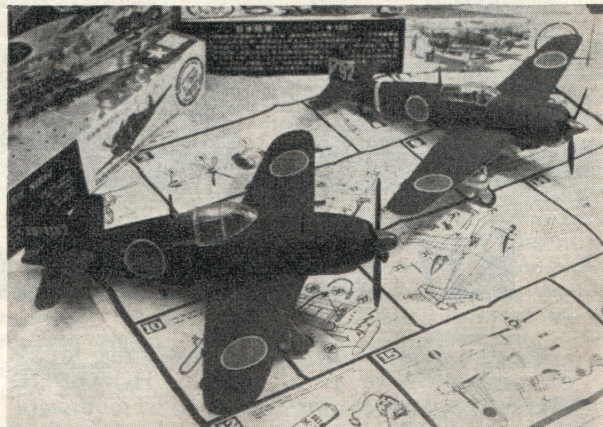
A fully illustrated step-by-step instruction sheet—written

Right: Two of the Tamiya 1:50 scale kits (top) from BMW Models. In the foreground is the Mitsubishi Raiden and behind it the Kawasaki Ki 100. Heller's 1:20 scale Renault 16 (bottom).

in English—takes all the terror out of what looks, at first sight, to be a complicated construction sequence. As a further aid to easy modelling, all the parts are kept on their sprues in separate polythene bags, with a sprue chart to show where each piece is. Tamiya describe the model as a 'T10 type JS3' and, to add to the confusion, illustrate a JS3 on the box-lid. Collectors will therefore want to know that the T10 is, in fact, a design developed from the JS3 with a longer, wider hull, an extra road wheel and numerous other improvements.

We were able to carry out extensive 'field trials' with the T10 model and can report that it is mechanically the simplest and best of all Tamiya models to date. The most intriguing feature is the realistic springing of the road wheels, effected by tiny coil springs bearing on the torsion arms. The rear axle is driven by a Mabuchi 25 motor powered by three U11 type batteries in the hull. A control arm giving a choice of reverse/stop/forward motion is

Continued on page 160



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Tamiya's excellent T10 model, available from BMW Models. The Chieftain in this series is of comparable quality. Both kits have incorrect decals—modified on the model shown here.

New kits and models—Continued

located under the rear hull. On test the model would climb 45-degree slopes with ease and—with new batteries—can climb over a 6 inch high knife edge. In short the performance is astonishingly good, and a delightful finishing touch is given by a working 'infra-red' searchlight.

The Chieftain was less happy in this respect. It incorporates an automatic stop switch which adds appreciably to the weight. Since the Chieftain is, in any case, a larger vehicle, the model has a less agile performance. What it lacks in power, however, it more than makes up for in looks, even though this did not seem probable when we opened the box. A quick examination of the components revealed a number of small errors, including over-large wheels and stowage boxes plus incorrectly angled hull faces. Even worse was the absence of rear slope on the top run of the track—a distinctive feature of the prototype—due to the sprocket wheel being located too high up. Curiously enough, however, all these errors more or less sorted themselves out when the model was completed, as the side skirts provided in the kit covered up the wheels and tracks almost completely.

The only modification we made was to the front of the turret, which Tamiya had made too 'square' where it covers the internal mantlet. We stuck short pieces of sprue each side of this section and covered the whole turret front with tissue paper to represent the shroud normally seen on the Chieftain turret.

There is a choice of gear wheels and worms in both kits giving variation in gear ratios if desired. These need oiling, it should be said, to preserve the life of the plastic worms provided.

The kits cost 29s 6d each from BMW Models of Wimbledon, the suppliers in Britain, who kindly sent us the review samples. *C.O.E.*

JAPANESE FOURSOME

FOUR new Japanese aircraft kits by Tamiya, available from BMW Models of Wimbledon, have been received this month. They are the Kawasaki Ki 100, Mitsubishi J2M3 Raiden (Jack), Mitsubishi A6M7 Zero, and the Kawanishi NIK2-J Shiden-Kai (George 21).

Each model is to 1:50 scale and they are all up to the standard that we have now come to accept from this manufacturer. We particularly liked the Ki 100, as this is a rare model and will be of great use to the collector of near 1:48 scale aircraft replicas. It would appear that Tamiya are producing all their models in two scales, the 1:72 variants of most of those in this review having been received earlier.

Each kit is provided with space and wiring for an electric motor, a feature only found on these Japanese kits. Like

their predecessors, the inclusion of the motor does not in any way deter from an accurately scaled model, and for the enthusiast wishing to add a few gimmicks these kits are ideal. The electric motor is not included in the kit.

Retracting undercarriages, sliding canopies and moving control surfaces are also standard features in each of the four kits reviewed. We found that the standard of the canopies was not quite up to that of the rest of the model and, although we were able to make each one slide in the correct manner, the clearness of the plastic was rather poor and there was a great deal of flash.

Each kit, which is moulded in dark green plastic, has an excellent instruction sheet. Although one was printed entirely in Japanese, the other three were not, showing that the Japanese industry is alive to its export markets. The kits cost 12s 6d each from BMW Models. *A.W.H.*

CAR TRANSFERS

ONE of the latest releases from Model Road Racing Cars of Bournemouth is a 150 item (no, that's not a misprint) full-colour sheet of slot-racing car transfers. Included on the sheet are Scuderia Ferrari, BRM, Lotus, Porsche, Maserati, Ford, Abarth, Mercedes, BMW, MG, Elva, Aston Martin, Cooper, Auto Union, Alfa Romeo and Standard Triumph car insignia, USAC club badge and 'Ecurie MRRC' decals, 40 black numbers (1 to 10), 40 white numbers (1 to 10), four white roundels and eight black and white body stripes of varying thickness. Cost of this bumper transfer sheet, which will add realism to any slot car, is only 2s 6d. *D.C.N.*

FIRST 9 IN 1 KIT

ANOTHER in the American MPC Gangbusters series, the 1:25 scale kit of a 1932 Chevrolet Cabriolet Convertible or Panel Truck hails itself as the world's first 9 in 1 kit. Though probably well-suited to the American market, in fact you pay for an awful lot of kit that you can't use. The potentially misleading illustration on the King-size box lid shows both the Cabriolet and Panel Truck versions. But you can only make one of the two basic models, let alone all nine variants. This seems a pity since, with another set of chassis parts, there is enough material included to make two cars. So, truly speaking, it's perhaps more accurately described as a '1 of 9' kit.

All main parts are moulded in black plastic, but good-quality chrome and clear plastic stems are included, as also are four plastic white walls for the soft rubber stock tyres. There is a fair amount of flash, but the detail and fit of the parts is good. The stock front suspension can be made to steer, but the soft plastic of the thin cart springing and beam axles makes for a considerable amount of play between the parts. The small plastic pins intended to hold the revolving wheels on to the axles are needlessly small. To push the pins home hard during assembly, in order to minimise the wobble of the wheels, is to court disaster, since cement is bound to ooze out on to the wheel.

The Cabriolet or the truck can be built as street rods with either a custom or blown engine installed. The stock Cabriolet can be built either as a getaway car or police pursuit, and appropriate transfers are supplied for the latter. The Panel Truck, or delivery van as we might refer to it, can be built as a mail truck or Police black maria on the side of the law, or as an illicit booze hauler. Our kit sample came from Auto-Models Ltd, who have stocks at 34s 6d each. *N.S.*

Letters to the Editor

Letters to the Editor can only be answered in the magazine. Readers whose letters are published each receive a free Airfix plastic construction kit of their choice. We are always pleased to receive your comments and pictures, which will be considered for publication. Submitted material and pictures can only be returned if accompanied by a stamped addressed envelope, and the Editor cannot accept responsibility for safe keeping of any such contributions, neither does he necessarily agree with comments expressed by correspondents in the letters column.

Irresistible

LIKE many others, I could not resist the Airfix HP 42, no matter what scale it was. Being one of the extroverts who flatly refuses to accept any model without converting it in one way or another, I decided to build a model of 'Hannibal'.

To obtain a realistic finish, the 'metal' parts of the model were covered with aluminium cooking foil, dull side out, and fixed on with extremely dilute rubber solution (dilute because rubber solution has a habit of dissolving the detail off any plastic).

The 'fabric' parts were spray-painted and then all the components were glued together. Rigging was done with thin nylon thread, also painted silver. The registration G-AAGX was manufactured from the letters supplied, the second 'G' coming from a 'C' with a right-angle of blue from the 'F' added to it.

Stephen W. Dyer, Marden, S. Australia.

Sherman Kangaroo

AS there is no effective British troop carrier in 1:76 scale, an easy one to produce is a Sherman Kangaroo. First take a knife and cut out the top of the Sherman body where the turret normally goes. Then cut out two pieces of card and fit them inside, one to seal off the engine and the other to seal off the driver and bow gunner. With the hull machine gun removed and a .50 inch machine gun placed on the gunner's hatch you have a very effective troop carrier, which will hold six to seven troops.

J. Roberts, London, N1.

Making 'sea'

AS P. G. Worman said in AIRFIX magazine (October) plaster of Paris dries too quickly to be moulded in any shape. As an alternative for the making of an artificial sea I have used Pollyfilla Cellulose Filler, which is manufactured in England but is obtainable in packets from our local ironmongery shops. This filler is a powder

January, 1966

used for minor home repairs such as wood filling, etc, and is similar in appearance to plaster of Paris. I found it ideally suited for the making of a sea because—as the instructions on the packet say—the mixture (only water added) remains workable for approximately one hour; when dry it becomes tough but not brittle.

As a base for my sea I cut a board to the desired area, on one side of which I applied freely a thick coat of varnish. On the wet varnish I then applied the desired quantity of Polyfilla mixture. In this way I succeeded in forming the wave crests and wakes, and also got the dried mixture fixed to the board.

The hulls of Airfix model ships are supplied in two parts, ie port and starboard sides, respectively, in which case the hobbyist preferring a waterline model which he can move about on the surface of an imitation sea, has to dispense with the whole bottom by cutting it away, at the risk of causing damage to the sides. Could the hull be supplied in three parts, ie parts (1) and (2) port and starboard sides respectively cut waterline, and part (3) whole bottom? In this way the hobbyist requiring model ships for a miniature harbour or naval battles can have an accurate waterline model without having to go through the very intricate task of cutting away the bottom.

Henry Calleja, Sliema, Malta.

Dinah that differs

MY congratulations on the fine Airfix model of the Ki 46 Dinah, which I purchased and promptly converted into the Ki 46 111-KAI interceptor. This is an easy job and well worth while. Here's how I did it:

(1) Some putty is applied to the nose to extend it by $\frac{1}{2}$ inch to the correct length of slightly more than 37 feet.

(2) Nose cannon: I used two spare Mitchell machine guns, but these parts are common. The port gun must be longer and more forward than the other.

(3) Obliquely mounted Ho-203 fuselage cannon: I used a piece of Westland

Whirlwind undercarriage, but again this part is commonplace. This points forward and upward at an angle of 30 degrees (official) but 40 or 50 degrees will pass. This was positioned above the large port window.

(4) Transparencies: all camera transparencies must be smeared over with body putty as well as the large port window.

(5) Paint: finish is unaltered but the fin flash changes. On my conversion a regularly flashing flame in the form of a hemisphere was coming from a blue gold-edged box with a serial number 24 lower fin forward. I used the 14 from the -J modified Mitchell's number 429145 as these are the correct size. Transfers are easy to come by though. The other emblems are unaltered.

F. Spare, Ashington, Northumberland.

Isolated incident

A LOT has been written recently of the Battle of Britain, but I would like to recall an incident that I witnessed on September 15, 1940, a Sunday. I had not been in the London area for the whole of the summer, but came home for a week's 'holiday' the previous day. On the Sunday afternoon I ventured out against all advice to visit a friend living just about on the boundary between Croydon and Kent, just by a place called Elmers End.

It was a fine clear afternoon, with plenty of sunshine, but little to be seen of the aircraft as they were so high. I managed to catch the silhouettes of the Heinkels, white against the blue sky, several times with the aid of a small telescope. There were no exciting 'sounds off', as I remember it, the whole sky from horizon to horizon was filled with a muted roar of the many engines up there.

However, I was at my friend's house in the early evening, say 5-6 pm, when we spotted an aircraft approaching quite low for a change, closely attended by two other machines. As they came over, flying towards the SE, I recognised the

Continued on next page

Letters to the Editor

Continued

leading machine as a Junkers four engined, most likely a Ju 90. I repeat that it was a four-engined machine, and can swear to this, and yet I have never read any reference anywhere to such aircraft taking part in the Battle. He was low enough for me to see the swastikas on his rudders quite clearly, without any telescope I should add.

The accompanying planes were Spitfires and as the trio was passing over the fighters would close up behind the German one at a time and fire off a burst or two. I distinctly recall the rippling flashes along the wings' leading edges and the crackle of the explosions. After three or four such passes the Spitfires broke off—having run out of ammunition, I have always imagined—leaving the Ju to go on its way with just a faint trail of smoke coming from one of its engines. At no time was there any answering fire from the rear gunner. I have often wondered if that German got home; was he armoured at all?

J. Stilwell, Croydon, Surrey.

Painting canopies

THE recent correspondence on the difficulties of painting the framework on cockpit canopies leads me to suggest that, after one has roughly painted the framework, deliberately extending the colour on to the actual 'glazed' clear panels, take a sharpened matchstick that has been dampened (and no more than that) in thinners, and gently but firmly use this to scribe round the edge of the framework, thus removing the excess paint and also ensuring straight edges to the finished article. A final quick swill round in warm water, to which is added a few drops of any washing-up liquid, will remove any faint smears that may be left, and also produce an excellent sheen and clarity to the cockpit cover.

Rigging bi-planes is a tedious but necessary task, and a new fishing line recently introduced into shops in England is ideal for this. It is sold under the trade name of 'Daryl', is completely translucent, adheres without 'melting' or shrinking, etc, to polystyrene, using ordinary plastic cement, and costs 1s 4d per 25-yard reel.

The ideal diameter for 1:72 scale aircraft rigging, and also aerial wires, etc, is the smallest available, .004 in (0.10mm), but larger diameters are available for larger models, and ship rigging, etc.

For navigation lights, using a heated safety pin (easier to hold than a normal pin) pierce the required area, trim with sharp blade, fill the hole with the appropriate colour (red port, green starboard, white for tail and formation lights, etc) and then drop a blob of polystyrene cement into the cavity—trimming if necessary with a sharpened match stick—and a final drop of clear varnish to finish it off.

Incidentally, the wheel hubs or centres on the 109s were painted a very dark semi-gloss grey, common to many Luftwaffe aircraft.

R. C. Jones, Solihull, Warwks.

8th Army conversion

I THOUGHT readers might be interested in a simple conversion I made with some figures from the Airfix 8th Army set. The conversion is to make a Boys anti-tank rifle.

The Bren gunner can be used as the gunner, the Bren gun barrel being cut off just before the stand. A pin is then rammed down what is left of the barrel forming the rifle. The observer and loader can be improvised from the prone figure with binoculars, and the prone helmeted figure with his rifle cut down to form an ammunition box.

Could you ask C. O. Ellis whether or not the 8th Army ever wore green blanched webbing?

T. D. Withey, Liverpool 22.

See our special 8th Army feature in the December 1964 issue. Webbing was blanched or bleached to a whitish shade—Editor.

Boomerang markings

AGAIN, Airfix have produced an excellent kit, the CA-13 Boomerang. For those who wish to construct a number of these kits, I have enclosed the following information. For No 5 Squadron aircraft, the following can be painted as per the instruction sheet: BF 'C' A46-175, BF 'S' A46-126 and BF 'Q' A46-212. The 'S' can be converted from a 'B' and 'C' converted from a 'Q' from the kit decal sheet. These aircraft also featured a pale blue-grey spinner.

Other squadron aircraft are BF 'N' and BF 'W' A46-177. These last two machines had dark-green spinners and pale blue-grey undersurfaces. The pale blue-grey paint rises suddenly to a

position slightly behind the leading edge of the tail plane and ending at the rudder hinge line.

Also, I have some suggestions for those who wish to finish their B-25 Mitchell in RAAF scheme, No 2 Squadron; serials A47-26/32, A47-38/50. Most RAAF Mitchells were silver overall with a dark green anti-glare panel forward of the cockpit. They carried blue-white roundels above and below wings and blue-white fin stripes on both sides of fins. These fin stripes ended at the rudder hinge line. The fuselage carried blue-white roundels, these being aft of the waist windows with the serials A47- aft of the roundels. These aircraft had the standard B25-J nose.

Finally, to add to the list of suggestions I would like to see a 1:72 scale Black Widow night fighter. This could be finished in the standard overall black night fighter scheme, and incidentally these machines were painted gloss-black overall, but after a few missions this wore down to a matt finish. The model could depict the machine that claimed the last kill of World War 2, 'Lady in the Dark', a P-61 assigned to the 548th Night Fighter Squadron, Ryuku Islands, in the Pacific.

Jeff Lewis, Victoria, Australia.

Bomb carts

IF some readers have problems getting hold of, or making, bomb carts, the following suggestion may be useful. Take three pieces of sprue (preferably without too many stems) and cut them all 2½ inches long. Then glue these three pieces together to form a platform. Take a piece of sheet metal about 1 inch by 1½ inches, and bend it into a semi-circle to form a 'cradle' to hold the bomb. The next step is to take some small spare wheels (I got mine from the Airfix Comet) and glue them on to the edges of the platform, making sure that they are perfectly aligned.

Next take a bomb, such as one from the Airfix Heinkel 111, and glue it into the hollow of the sheet metal. Finally fix a small piece of chain, with .2 inch links, on to the bottom front of the cart. Brian McConnell, Saskatchewan, Canada.

Pen-friends wanted

THE following readers have written to the Editor requesting pen-friends. Carmel Spiteri, 21 Cospicua Road, Paola, Malta, would welcome pen-pals interested in World War 2 aircraft, and is ready to answer all letters. Michael Nye (13), 16a Magdolan Road, Norwich, Norfolk, would like an American pen-friend (aged 12 to 13) who is interested in all types of modelling, and in the Army, Air Force and Navy. Interested readers are invited to establish contact direct, at the addresses given.

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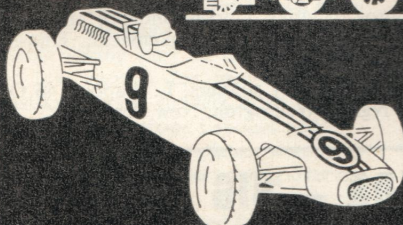
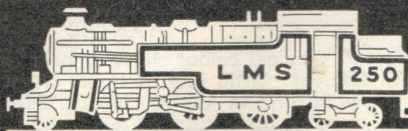
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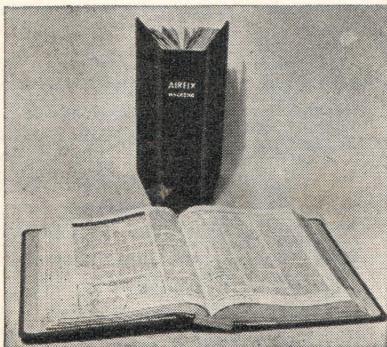
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